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## A CLINICAL LECTURE.

### *DIAGNOSIS OF DISEASES OF THE NERVOUS SYSTEM.*

BY J. T. ESKRIDGE, M.D.,

Post-graduate Instructor on Nervous Diseases in the Jefferson Medical College, and one of the Physicians to the Hospital of the College.

[Delivered by invitation before the El Paso County Medical Society, Colorado Springs, Colorado.]

LECTURE II.

ELECTRO-DIAGNOSIS.

MR. PRESIDENT AND GENTLEMEN: We pass to-night from the study of tendon reflex to the consideration of electricity as a means of diagnosis in nervous diseases. To the great English physician, Marshall Hall, is due the credit of having first directed the attention of the medical profession to the value of electricity in the diagnosis of paralytic diseases (published in the Medico-Chirurgical Transactions for 1839, and quoted from Althaus on Medical Electricity, 1860). Although some of his conclusions are erroneous, yet his investigations served their purpose in stimulating research by others. Dr. Hall's theories were criticised and objected to by Dr. Pereira in 1841, and by Dr. Copland in 1845. Todd, in 1847, followed with an able paper "On the Contractility or Irritability of the Muscles of Paralyzed Limbs, and their Excitability by the Galvanic Current, in Comparison with the Corresponding Muscles of the Healthy Limbs." *Ibid.*

The results of these investigations, with the later researches by Duchenne, and the more recent by Erb, Ziemssen, Brenner, Dubois-Raymond, De Watteville, and a host of others, enable the diagnostician of the present day to employ, with considerable precision and skill, electricity in the diagnosis of certain nervous diseases.

It is necessary, at the beginning, for us to consider certain preliminaries, which must always be understood and arranged before attempting to use electricity in investigating disease. Both the galvanic and faradic currents should be employed. In choosing a faradic battery, one containing a slow and a rapid interrupter should be selected. The faradic battery I show you, made by Otto Flemming, of Philadelphia, has the necessary interrupters, and is one of the best and most satisfactory of the kind. A good stationary galvanic battery is constructed from the Hill's gravity element, or better, from Siemen's and Halske's modification of the Daniell-element. Most portable constant current batteries are objectionable, especially for diagnostic purposes. The least objectionable, and the one now employed by several electricians, is constructed from the Leclanché element. In the ordinary zinc and carbon portable galvanic battery, the current rapidly rises to the maximum, and then quickly declines to zero. After such a battery has been in action a few minutes, the current from a given number of cells is much weaker than at first, hence the difficulty in making acccurate comparisons of nerve and muscular irritability on both sides of the body, even at the same sitting. But when the reactions obtained at one examination are to be compared with observations made a week later, the difference in the strength of the current may be more marked, and the value of the comparative examinations consequently lessened. The galvanic current may be broken

by simply taking off one electrode, but it is much more convenient and satisfactory to have the interruptions made in the handle of the electrode by means of a button, such as I show you.* Besides the ordinary sponge electrodes, it is well to have a few small olive-shaped ones covered with chamois skin, or what will answer equally well, according to Dr. Massey, a thin layer of absorbent cotton, for picking out small muscles. A muscle is said to be stimulated directly when the exciting electrode is placed over the muscle, and indirectly, when the electrode is placed over the motor nerve supplying the muscle, known as the motor point.

In health, direct and indirect stimulation of a muscle is followed by the same amount of contraction. When the faradic current is used simply for excitation, the cathode or negative pole, which is the irritating one, should be placed over the nerve or muscle to be excited, and the anode, or positive pole, on some indifferent part. In employing the galvanic current for the same purpose, either the positive or negative pole may be placed over the part to be stimulated, and the other, the indifferent electrode, preferably over the sternum, according to Erb (Bartholow). The cathode or negative pole of the galvanic current, has greater exciting power than the anode, and causes contraction chiefly on closing the circuit, whilst the anode causes contraction chiefly on opening the circuit (Bartholow).

*To Examine for Reactions of Degeneration.*—Have the limbs whose muscles are to be tested in the same relative position, with muscles equally relaxed. When the skin of the person to be examined is dry and harsh, the parts over which the electrodes are to be placed should first be thoroughly moistened. Then the sponge or electrode covers should be wet with warm water or a warm solution of salt to increase their conductivity. The use of the salt is important for diagnostic purposes where the weakest current that will cause contraction of the healthy muscles is used, and compared with the effect of the same strength of current on the affected or paralyzed muscles. After moistening and applying the electrodes on one side, do not rewet them or change the position of the indifferent electrode until the comparison is made. Continuous and equable pressure with each electrode should be made. If the muscles of only one side are affected, a comparison is made with those of the healthy side; but if both sides are diseased, the comparison is made with the reactions obtained from corresponding muscles in a healthy individual. I will repeat that the comparative examination for nerve and muscle irritability should be made with the weakest current necessary to produce slight contraction of healthy muscles. But this is not enough. Gowers says: "Two conditions may be tested—first, the lowest strength of stimulus to which the muscle or nerve will respond; and secondly, the relative degree of response to a stronger current. The former is the more important, but has been insisted on too exclusively, for the latter is important also. If a few fibres of a nerve are healthy, and the others are degenerated, contraction may occur with as weak a stimulus as in the healthy nerve; but if the current be made a little stronger, the contraction in the diseased part may remain the same when that on the healing side is energetic. Both irritability and power, therefore, should be noted."*

Begin the examination with the faradic current, because the muscles as a rule fail to respond to this current first. Several comparative observations at the same and at different times are necessary. It is important that the effects of the current be limited to the muscles under investigation, and that a derived is not mistaken for an exciting current. The muscle should be stimulated directly by applying the excitant electrode over the muscle, and then indirectly by placing the electrode over the motor point of muscle.

When a healthy muscle is stimulated, either directly or indirectly, by means of the galvanic current, the normal formulæ of reactions (the stronger being stated first in the order named) are as follows:—

| | | |
|---|---|---|
| 1st. Cathodal closure | contraction | Ka SZ |
| 2d. Anodal opening | " | An OZ |
| 3d. Anodal closure | " | An SZ |
| 4th. Cathodal opening | " | Ka Oz |

The above reactions of a muscle are obtained in the following manner:—

For cathodal closure contraction, place the positive pole over the sternum and the negative over the belly of the biceps muscle; then sud-

*Gowers prefers the interrupter to be attached to the battery, and not in the handle of the electrode (Diseases of the Spinal Cord, p. 42).

* Diseases of the Spinal Cord, p. 43.

denly close the circuit. If now, without changing the position of the poles, the current is suddenly broken, the reaction will be cathodal opening contraction. For anodal closure contraction, place the negative pole over the sternum and the positive over the biceps muscle of the arm; then close the circuit. The anodal opening contraction, which in strength is next to the cathodal closure, is obtained by quickly breaking the circuit while the poles occupy the last-named positions. In numerous primary and secondary affections of nerves and muscles, only quantitative changes from the normal reactions may be found; but whenever degeneration of muscular tissue takes place, the above formulæ will be variously changed, giving rise to reactions of degeneration.

By means of electricity and associate symptoms we should endeavor to determine the cause of the paralysis, which may lie in nerve, muscle, spinal cord or brain. Following the method pursued by Professor Bartholow in his admirable and practical treatise on "Medical Electricity," we will first study the effect of electrical stimulation of muscles primarily diseased. Exposure to cold and contusions may paralyze a muscle. According to Friedreich's theory the disease, known as progressive muscular atrophy, begins in the muscles and extends to the nerves, and finally to the multipolar cells in the anterior cornua of the cord. For a very short time in all irritative lesions of muscles, where the muscular tissue is not already destroyed, the electro-contractility is nearly normal for the faradic current, and more or less increased for the galvanic. But as soon as the muscular tissue begins to degenerate the electrical irritability lessens. The muscles fail to respond to the faradic current first, whilst to the galvanic qualitative and quantitative changes are found. Finally, when fibroid and fatty transformations have gone on to the destruction of all contractile tissue, the muscle will no longer respond to the strongest possible faradic or galvanic current.

As has been stated, a given current of electricity excites the same amount of contraction, whether applied to a muscle or its motor nerve. Claude Bernard, by paralyzing the end organs of the nerves, was the first to demonstrate the fact, now recognized by all physiologists, that the muscles are endowed with a certain amount of contractility irrespective of their associate nerves. Whilst it is important for us to bear this in mind, and test for nerve and muscle irritability separately, it is equally important for us to remember that the healthy state of the muscles depends directly upon the normal condition of the motor nerves, and that a muscle cannot long remain severed from the innervating influence of its motor nerve without undergoing degeneration. Now it sometimes happens that a motor or mixed nerve is disabled by primary or secondary inflammation, or by contused or incised wounds. Under such circumstances, during the stage of irritative inflammation, the irritability of the nerve is increased to both currents. If the nerve is softened or destroyed by inflammation, the irritability of nerve and muscle gradually lessens and may be finally lost to both currents. In clean cut wounds of nerves, where the latter is entirely divided, the increase of the nerve irritability is less than in contused wounds, because the resulting inflammation is not so great; but, if the injury is irremediable, the nerve failing to unite, both muscle and distal portion of motor nerve undergo fatty degeneration and lose alike their power of responding to all kinds of stimuli. If a divided nerve unite it will conduct volitional impulses before the muscle can be made to contract by the galvanic or faradic current.

[Concluded in June number.]

# ORIGINAL COMMUNICATIONS.

## *ABDOMINAL SURGERY; SEVEN CASES.*

BY E. V. MONTGOMERY, M.D.
Late Obstetrician to the Philadelphia Hospital.

[Read before the Clinical Society, February 27th, 1885.]

ALTHOUGH the majority of these cases have been published, we feel that they present points of sufficient interest to permit of their being grouped together, and they thus enable us to discuss more readily the treatment and results.

CASE I.—*Ovarian Tumor; Ovariotomy; Recovery.*—Mary W., æt. 28 years, married, of irregular habits, entered the Philadelphia Hospital April 23, 1879. Health had never been good, and had a family history of phthisis. Menstruation began at twelve years, and continued until four years before. She had had three miscarriages; the first at five months.

A swelling appeared in the left inguinal

region four years before, which increased gradually, and during its growth her menses had occurred at irregular intervals. Within the last two years she had had occasional retention of urine, requiring catheterization, and had had continual morning sickness. The distress in the back and lower part of the abdomen had been so severe as at one time to lead her to attempt suicide, for which she was confined in the Insane Hospital. She was still irritable, and at times required close watching to prevent attempts at self-destruction.

The abdomen was nearly symmetrical, slightly more prominent to the left; while recumbent, percussion was now resonant over the superior part of the tumor, and tympanitic in the inguinal region. Fluctuation was quite distinct. The abdominal walls were freely movable, and the tumor could be seen to move up and down during respiration. The uterus was neither enlarged nor connected with the tumor. The tumor was decided to be a left ovarian cyst, and its early removal advised. The patient consenting, four weeks later I performed the operation, assisted by Drs. Walker, Warder, Bell, Heller, and Martin. The spray and other antiseptic precautions were used. An incision three inches long was made to the peritoneum, when, no bleeding occurring, the latter was opened, and the pearly-tinted cyst disclosed. Finding no adhesions, the incision was extended to five inches, the sac punctured with the trocar and drawn out, as its contents were discharged. There were no adhesions. A clamp was temporarily applied to the long pedicle and the tumor removed. The pedicle was treated intra-peritoneally, tied with silk in two sections, and the ligature from one side tied around the whole stump. The right ovary was found to contain two small cysts, but, as my principal assistant, Dr. Walker, feared its removal would prejudice the result, it was allowed to remain. The abdominal cavity carefully cleansed, the wound was closed with silver sutures, half an inch apart, and including nearly an inch of the peritoneal surface. The antiseptic dressing was applied, and the patient placed in a bed previously heated by cans of hot water. The operation occupied thirty-two minutes, and was followed by no shock. She had some nausea and vomiting, which was controlled by mustard sinapism and sipping hot water. Later, she was so violent that morph., gr. ss., was given hypodermically, and subsequently chloral, gr. xx, per rectum. The delirium was most marked upon the first, fifth, and eighth days, requiring the nurse at times to hold her in bed. The highest temperature reached was 101.6, occurring on the evening of May 22d, the second day, and became normal the morning of May 24th. She was able to walk into the clinics two weeks after the operation. She has returned to the hospital at various times since the operation, and was an inmate of the obstetrical ward during the early part of 1884, suffering from the effects of a recent abortion.

CASE II.—*Cancer of the Uterus and Rectum; Colotomy; Survival One Year; Death; Autopsy.*—Louise P., æt. 35 years, domestic, of German descent, married, mother of five children, was admitted to Philadelphia Hospital in April, 1880, suffering from cancer of the uterus and rectum, causing stricture of the latter viscus. The trouble began eighteen months before as an uneasiness about the rectum, difficulty in defecation, attended with straining and pain. The discharges were slight, liquid, of a muco-purulent and occasionally bloody character. This condition continued, better or worse at intervals, until within five months of her admission, when it became permanent. She was treated for several months at St. Mary's Hospital, with but little relief. She is greatly emaciated, presents a sallow cachectic appearance; complains of want of appetite; nausea, and frequent stools, largely of a muco-purulent and sanguineous character, attended by great straining and severe pain.

Her previous health was good. She denies any syphilitic taint. Her habits are bad, being intemperate, and an inveterate user of snuff. Mother died from "rectal obstruction," most probably cancer. Menstruation had ceased.

The uterus was retroverted, hard, dense, immovable. Posterior wall of vagina rigid. Rectum was obstructed an inch from the anus by a firm annular stricture, which would not admit the little finger.

April 14, 1880, the patient was etherized and rectotomy was performed, by passing a probe pointed bistoury through the stricture and cutting toward the sacrum. The rectal walls were infiltrated and contracted, so far as the finger could reach. The following day a severe diarrhœa set in. She progressed from bad to worse; stools were then muco-purulent, attended with great straining and agonizing

pain. The skin was a dirty-brown color, and emitted an offensive odor. She was weak, without appetite, and suffered from nausea and vomiting.

April 28th, 9 A.M., she was brought before the class for colotomy, though her condition was such as to render the efficacy of any operative interference extremely doubtful. Drs. Parish, Musser, and Stryker assisted in the operation. She was placed upon the right side with a good-sized pillow under the abdomen. A stain with iodine was made at a point half an inch posterior to the middle of a line drawn from the anterior to the posterior superior spine of the ilium. An incision, midway between the lower rib and crest of the ilium, was made from the erector spinæ mass, obliquely forward, four inches, through skin, superficial fascia, and lumbar aponeurosis, to the quadratus muscle, tearing through the fascia covering it anteriorly. The gut protruding into the wound, it was transfixed by two sutures, three-fourths of an inch apart, drawn out, and an opening made between them. The gut was then attached to the skin by six wire sutures. The wound was dressed with oakum, saturated with carbolized oil.

She stood the operation badly, and it was only through frequent subcutaneous injections of whiskey by Dr. Parish that she survived it. She, however, rallied from the shock, and recovered without difficulty. The first evacuation through the artificial anus occurred on May 2d, the fourth day after operation, and was painless. By the end of a month she was able to attend to herself and go about the house at will.

*Oct. 8th.* She looked much better than upon her admission; had a marked tendency to diarrhœa, which was controlled by morph. gr. ¼ daily. With the morphia she had two evacuations daily. With each evacuation from the side, there was a muco-purulent discharge from the anus. Death occurred in May, 1881, from exhaustion.

*Autopsy.*—Body greatly emaciated. The intestines were everwhere glued together by old bonds of adhesion. The whole of the rectum and part of the sigmoid flexure had undergone malignant degeneration and softening. The opening of the artificial anus was about five inches above the flexure, and the portion of bowel below it was contracted and empty.

CASE III.—*Multiple Uterine Fibroid Partially Calcified; Removal; Death; Autopsy.*—Maria B., (colored), æt. 53 years, single, domestic, was admitted to the Philadelphia Hospital April 21, 1880, with a large abdominal tumor, which had first appeared some seventeen years before. The growth was first noticed in the left inguinal region and gradually grew until it completely filled the abdomen. Her greatest distress had been from the size and weight of the tumor. She had a sister suffering from a similar growth. The menopause had occurred seven years before, after which the tumor had remained unchanged. During her menstrual life the flow was excessive.

She was greatly troubled with constipation; appetite variable; digestion moderate; pulse soft, compressible. The abdomen was very prominent in the upright position, so that she was obliged to lean back to support it. The superficial veins of the abdomen were distended. The abdomen is quite irregular, more prominent to the right; below and to the left, above and in the centre the umbilicus protrudes like a nipple.

The tumor was fully movable, irregular or nodular, and presented a flat surface in the hypogastric region, the pedicle, hardly an inch in diameter, could be distinctly felt. The tumor was very hard, and intestinal resonance could be distinguished at each side.

Per vaginam: the hymen was unruptured, the os normal, cervix elongated, apparently attenuated, posteriorly, a large mass filled up the pelvis, and another above. Per rectum: a large hard tumor in Douglas's *cul de sac* pressed upon the rectum, was as freely movable as the space would admit, and was continuous with the mass above. It had undergone calcareous degeneration, as was shown by the density and cracking of a bony plate during examination.

In view of the patient's hapless condition and her desire for the removal of the tumor, an operation was deemed desirable.

After suitable preparatory measures, the patient was etherized and brought before the class May 5th, and the operation performed under carbolic spray. Drs. Warder, Parish, Lynn, Stryker, and Hatfield assisted. An incision four inches long, avoiding large veins, was made to the peritoneum, hemorrhage arrested and the latter opened, when a few ounces of ascitic fluid escaped. Finding the cervix sufficiently long for a pedicle, the abdominal wound was extended above to the

umbilicus and below to an inch of the symphysis. The growth was a cluster of fibroids; the largest, situated above to the left, had extensive omental adhesions, which, being very vascular, were tied by a double ligature. Considerable difficulty was experienced in bringing this portion through the opening. It was connected with the main tumor by a pedicle the size of the wrist, which was ligated and the mass removed. The cervix and broad ligaments were then ligated in three sections just above the bladder with iron wire, and the remaining portion removed. Two of the tumors were so near the ligatures that the excision had to be made through them, after which the remaining portions were enucleated. This loosened the wire, so that it did not entirely control the bleeding; a clamp was temporarily applied, the surface seared with a hot iron and the stump encircled by another wire. After arresting all bleeding and carefully cleansing the abdominal cavity, the wound was closed with silver sutures, excepting at the lower angle, where a glass drainage tube was inserted.

The complete Lister dressing was applied to the wound, and the patient placed in a well-warmed bed in a private room. The operation occupied two hours, and was followed by profound shock, but she rallied under whiskey and digitalis and external heat.

8.30 P.M., T. 101°, P. 116; had pain over the abdomen, nausea and vomiting were marked during the afternoon, but yielded to rectal injection of chloral.

*May 6th.* 4 A.M., T. 101.4°, P. 138.

4 P.M., T. 103.8°, P. 152. As the dressing was saturated with discharge, it was renewed under the spray.

*7th.* 7.30 P.M., T. 100.6°, P. 140; shows evidence of failure; tongue, dry, parched and tremulous; skin covered with a cold, clammy sweat; abdomen tympanitic, and distended to the size before the operation.

Death occurred at 4 P.M. Autopsy twenty hours after death.

The peritoneal line of incision was united, excepting at the point of entrance of the drainage tube. The intestines were distended, and the peritoneum injected. The intestines were glued to the pedicle, but nowhere else in the abdomen were there any flakes of lymph or any pus. The pedicle itself was in good condition; lymph had been thrown out, gluing it to the adjacent intestines and encysting the wire. The bladder was in a normal condition, though the wire encircling the pedicle was in close proximity. The remaining cervix measured 2½ inches. Kidneys large, fatty; capsule easily separated. Liver fatty. Heart soft, flabby; aortic valves contained bony plates. The aorta had undergone atheromatous degeneration, and contained numerous plates of calcareous formation.

The mass removed weighed twelve pounds, and presented a large number of tumors of the submucous, mural, and subperitoneal varieties, varying in size from a hickory-nut to that of the largest, which weighed seven pounds.

[Continued in June number.]

## *WHEN DOES SYPHILIS BECOME CONSTITUTIONAL?*

BY DR. ERIK PONTOPPIDAN, OF COPENHAGEN.

THE solution of the question at which epoch syphilis has invaded the whole organism and from a local lesion has become a constitutional disease, has of late won a more actual and particular interest, since the treatment of the induration by excision has been proposed, and, by several, rather extensively carried out. This treatment must, to anybody believing in the purely local nature of the initial sclerosis, occur as theoretically well-founded, while those who consider the induration as the first symptom of an already universal disease, *a priori* must be against the excision as being of no use.

These two theories are in fact standing against each other as hard as ever up to this day. I avoid on purpose the expressions "Unicists" and "Dualists," although they are commonly used, because in this question their use is not logical. Certainly do the unicists, as a rule, look on the induration as a local focus from where the virus spreads later on; while the dualists generally see in it the first symptom of an universal infection. But the terms themselves express neither more nor less than the postulates for one or for two virulences in the two sorts of chancre, without any necessity founded either on logic or on facts for a particular view in the question of the local or constitutional nature of the induration. In other words, it is possible to believe in two different sorts of virus, for the ulcers simply and the induration, to be dualist, and at the same time partake in that view of the induration as a

purely local process, which is generally accepted as the unicist's theory. The thing is, that we have to do with two essentially different conclusions based on essentially different proofs and facts. The main proof for or against the acceptance of two species of virus lies, as by any other decision on species, in the natural history of the propagation; if soft sores always propagate as soft sores, and syphilitic chancre always gives syphilis, we have two distinct kinds of disease; if one may develop into the other, if soft sores can propagate as syphilis and *vice versa*, they are only variations of one virus. But this is quite a different question from that which here is to be considered, namely, how the syphilitic initial sclerosis is to be accepted and valued in the series of symptoms, as a still purely local or as a constitutional affection.

Now the results of the chancre excisions have been set forth as giving at last a practical solution of this vexed question. The partisans of the method of excision point to the cases where the outbreak of constitutional syphilis has been kept away by excision of the primary sclerosis as positively proving that the virus is originally limited to a local point, while their adversaries show how the excisions no doubt rather frequently fail as a prevention against the universal outbreak, and in this failure find the proof that syphilis already was constitutional. But the sober truth is, that as the results of the excisions up to now are: the greater part followed by syphilis and a smaller part not, is it possible to use them as proofs with just as good or better, with just as bad right in the one way and the other? The cases where syphilis has not followed after the excision, are, up to the present time, so proportionately few that they hardly are able to exclude the possibility that an outbreak perhaps also otherwise would have stayed out, either on account of the uncertainty of diagnosis, or because some cases of undoubted induration remain local without later general symptoms ever being observed. Even the most competent authority at diagnosis falls short in producing the stringent evidence wanted in a scientific proof, when even it might be personally fully convincing. But on the other side are the numerous cases where excision has been followed by syphilis, even if they were more numerous and comprised every and all, by no means a sufficient proof for that fact, that syphilis at the time of the operation was universal. They show neither more nor less than that the infection at that time had spread wider than the part excised—how far, we have no means of knowing.

In order to find proofs for the significance of the sclerosis as an indication or not of universal infection, it is necessary to return to the good old experiment of inoculation. On such the theory of induration as a sign of completed universal infection has built its seemingly impregnable castle: Inoculation from a syphilitic induration to a non-syphilitic individual gives induration and syphilis; inoculation from an induration to an individual constitutionally syphilitic has a negative result; inoculation from an induration to the possessor also has a negative result: *ergo*, is this individual already constitutionally syphilitic?

This conclusion, seemingly of such superior validity, nevertheless has some rather weak points. Even if we provisionally accept the premises as just, it is easy to see that in reality nothing is proved from the very moment of the inoculation. But at all events only for this point of time, plus the incubation time for the eventual induration number two, or, in other words, that imperceptible process which takes place during the first weeks after the inoculation and which is called the first incubation, might possibly go on regularly like in any other non-syphilitic organism; but when the organism at the time, when the more pronounced proliferation, the induration, were to take place, at last has been universally impregnated with the virus, the induration number two does not any more find a virginal soil to develop in—we get a negative result.

If this reasoning be right, it does not lie far to assume that cases might be found, where inoculation had taken place so early, that a new induration would get time to develop more or less fully; and this is just what can occur. Wallace, Puche, Boeck, Bidenkap and Bumm have published single cases where auto-inoculation from a sclerosis has effected a new sclerosis. When these positive results only represent such very isolated exceptions in the crowd of experiments, is perhaps the explanation partly to be found in the way in which they generally are executed. As a rule, they are made after the example of Ricord, with a diagnostic view: if the inoculation from an ulcus after a day or two has given a positive

result, this has been recorded: the ulcus was an ulcus simplex: or, the inoculation takes no effect, the mark of the lancet disappears in a few days; the result is noted down as negative; the ulcus has been an indurated chancre. In a long series of inoculations, which I have performed during several years as resident physician to the dermatological and syphilitic wards at the Communal Hospital, Copenhagen, it passed just as described in the commencement; but continuing the observation of the patients over a longer period, it caught my attention, that, in some cases, the already vanished inoculations after some weeks revived, showing small red spots or papules, which, by some very early performed inoculations, went so far as to develop into distinct, well-defined, inoculated sclerosis. As illustration, follows five of the most instructive cases; they were all observed during the patient's stay in the hospital, where they daily presented themselves, quite stripped, to be examined by the medical staff.

I.—C. I., was admitted in the hospital February 3, 1883. Day of infection cannot be stated, as he had repeated cohabitations up to a week before admission. He dates, himself, the infection three weeks back, when he observed an erosion on the glans, which later ulcerated. Now was found in sulcus coronarius a somewhat foul ulceration the size of a split pea; feeble, commencing induration was felt, though rather dubious; the glands in both inguinal somewhat swollen, perhaps not more than habitually though. The diagnosis being uncertain, on the second day three inoculations were made with the lancet on the abdomen. The fifth day (after the admittance) negative result was recorded; the traces of the lancet were wholly without reaction, and disappeared later. On the right side of the penis, about the middle, appeared a pustule, which left an excoriation about the size of a split pea, having on the eleventh day an infiltrated basis. The ulceration in sulcus coronarius meanwhile had become more distinctly indurated. On the thirteenth day was noted that the glands in the right region of late had become enlarged and indolent. On the fifteenth were the indurations, the cutane one too, increasing. On the place of inoculation appeared red, slightly elevated papules, the size of a hemp-seed. No constitutional symptoms. The papules, particularly one of them, increased in size, while the ulcerations healed up. On the twenty-second was one of the papules, the size of a pea, distinctly hard. On the twenty-seventh the ulcerations were healed, but strongly indurated, the papules stationary. On the thirty-first the papules were increased, the biggest the size of a bean, and distinctly indurated to the touch. The patient complained of headache and lassitude. The thirty-sixth day had all the indurations diminished a little, also the papules; the biggest of them had on the apex a crust. Macular syphilides broke out.

Consequently the patient exhibited three indurations, arising at different times, *s.c.*, the one on the glans, which was present by the admittance in the hospital, the cutane one, which on the eleventh day showed commencing induration, and on the fifteenth was distinctly indurated, and finally the inoculation papule, on the abdomen.

II.—I. I. was admitted on the 25th of June, 1883. Last coitus four days before admittance; last, but one, three weeks previous. A fortnight ago he had remarked small excoriations on the præputium. Now he presented in sulcus coronarius one large, deep ulceration, and several smaller, with dubious induration. The inguinal glands a little swollen. On the second day three inoculations were made on the abdomen, which on the fourth day showed no result. On the sixth the ulcers were cleaner, but the hard infiltration increasing. On the eighteenth the induration was strongly marked, extending to the orificium urethra. The swelling of the inguinal glands growing; no constitutional symptoms. On the twenty-third, appeared pale red, slightly elevated papules, the size of a pin's head, on the inoculation places. On the thirty-first broke out a macular and papular exanthema; the inoculation papules had, meanwhile, increased in size, distinctly hard to the touch. On the thirty-ninth they began to fade; the fortieth a cure was instituted (injections with hydrarg. formamid.). On the forty-fourth, the inoculation papules were scaly, and less prominent; the other papules still distinctly elevated. On the fifty-eighth the induration-papules had left pigmented spots, the other symptoms had, with the exception of a remnant of the induration, completely disappeared.

III.—M. I. was admitted in the hospital the 6th of August, 1883. Infection a month before. Patient had on collum glandis some bean-shaped, dirty, copiously secretive ulcerations, surrounded by rather insignificant induration, and accompanied by small swellings of the inguinal glands. On the third day three inocu-

lations were performed, which, on the fifth, showed negative results. The ninth the places of inoculation were scarcely to be discovered. The eleventh the inguinal glands increased in size; indolent; no further symptoms. The sixteenth, on the inoculation places, which up to now had entirely disappeared, two red papules, the size of a pin's head, were discovered. On the twentieth day they had, particularly one of them, grown considerably, and were distinctly elevated. On the twenty-third the growth had continued, it was the size of a split pea, evidently hard to the touch, and had a scaly collar on the apex. No constitutional symptoms. On the twenty-fourth macular syphilides appeared on the body, also adenitis universalis; a cure (injections of hydrarg. formamid.) was commenced. On the twenty-seventh the spots were numerous, the papules indurated, sharply-defined to the touch, but more level and scaly on the surface. On the thirtieth the papules were quite level; the spots still to be seen. On the forty-first the spots had disappeared; the inoculation papules still to be observed. On the forty-second day superficial ulceration in the fauces, which were touched with nitrate of silver. On the forty-fifth day was still induration on glans, and swollen glands remaining, the other symptoms disappeared; in the place of the papules only level, pigmented spots.

IV.—T. A., was admitted on June 20, 1884, with dubiously indurated ulcus penis. Last coitus three days before admittance; last, but one, four weeks previous. The same day three inoculations were made, which on the third day showed negative results, while distinct induration and adenitis negreinatis were stated. From then no alteration was noted up to the twelfth day, when red, scarcely elevated spots, the size of a pin's head, appeared on the inoculation places. Induration and adenitis growing forcibly, and were, on the nineteenth day, very prominent. The inoculation places now showed three red, lenticular, plainly elevated papules. No constitutional symptoms. On the twenty-sixth day an outbreak of macular and papular syphilides. The inoculations now were the size of a split pea, and changed into pustules, which were covered with crusts. A cure of injections was begun. On the twenty-eighth a reinoculation from the pustules was performed, but without result. The eruption increased, and reached on the thirty-second its acme, also the inoculation pustules; on the thirty-sixth the crusts had fallen off and showed a more level, scaly surface. Now these papules, as well as the universal eruption, slowly went into resolution. On the fifty-second day they were still to be seen, but in a fading and level state, and on that day the patient was presented to the Dermatological Section of the International Medical Congress for verification. Dr. Barthélemy, of Paris, in his report from the Congress, in "Annales de dermatologie et de syphilographie," writes on the case: "Au moment où le Congrès est appelé à éxaminer le malade, les trois érosions sont guéries, mais elles forment, encore une saillie arrondie, ardoisée et dure, ayont l'étendue d'une petite pièce de 20 centimes. Ces trois lesions, telles quèlles sont encore au moment de l'examen, ont des caractères assez nets pour pouvoir etre diagnostiquées, sans hesitation et sans crainte d'erreur, *chancres syphilitiques* à la periode de reparation et d'induration persistante."

V.—L. A. was admitted the 12th of August, 1884, with a small ulcus sulci coronarii; date of infection, ten days previous. On the second day the ulceration was cleaner, but larger and infiltrated. On the fourth day (after inoculation) no result was recorded. The induration was now distinct. On the sixth day the inoculation places were scarcely to be seen. On the eleventh adenitis inguinalis was noted. On the 13th day, on one of the inoculation places (corresponding to the first puncture), appeared a small, red, not elevated spot. On the fifteenth the induration on penis was the size of a cent; on the eighteenth still increasing, also the adenitis inguinalis. The red spot slightly elevated. On the twentieth the inoculation papule was distinctly elevated; no constitutional symptoms. On the twenty-second a commencing dubious roseola was observed; the papule increasing; on the twenty-fifth it was as big as a pea, hard and elevated. Macular syphilides broke out, and a cure (injections) began. On the twenty-ninth the papule was a little paler and more flat. On the thirty-third day the eruption had disappeared, the papule red, but almost level. On the thirty-fifth it was evidently fading. On the fortieth all the spots had disappeared; of the inoculation papule there was only a trace.

These cases are so typical and so much alike that they might be comprised into a paradigma. An inoculation which is performed so early that the time corresponds with the first, com-

mencing with, perhaps, rather dubious induration, gives after an incubation of two or three weeks as a result small, red, in the commencement, scarcely elevated papules, which always appear before the outbreak of constitutional symptoms and which indurate, growing to the size of a pea or bean, while they at last resolve and fade away after the constitutional symptoms have fairly developed.

These experiments show that the organism in certain cases can react against a syphilitic auto-inoculation, at all events up to a certain point, in precisely the same manner as any non-syphilitic. On account of the distinct incubation and the whole evolution of the papules, it is not possible to admit the thought of a Clerc's chancroid (which also is a positive result of a syphilitic inoculation on the person, but as an ulceration without any incubation). The only way to avoid the acknowledgment of my inoculation results as legitimate initial sclerosis seems to be, with Tarnowsky, to interpret them as the result of a disposition in syphilitic individuals, in the secondary period, for traumata to become a starting point for syphilitic manifestations, and particularly for a sort of pseudo-induration. Without discussing the merits of this theory, which to say the least are problematical, it is sufficient in the present case to point out how, in my patients, where the inoculation had result, it was so promptly answered with the appearance of indurated papules after regular incubation time in almost all the lancet punctures, while it never was seen that needle scratches or other lesions, which these individuals of course were not likely to avoid, were followed by anything like papules or indurations.

When these results are to be accepted as regular initial indurations, perhaps with a tendency to an abortive evolution, as the spreading universal infection takes away the soil beneath them, it is a strong point in favor of the theory, according to which the primary induration in the commencement at least is a purely local affection. If we get some more positive results of chancre excisions the proof will be decisive. As long as we have no criterion on the latent syphilis, we have no sure means to know how far the poison in the particular moment has spread. If we had, for instance, positive results of inoculation with blood from the period of the second incubation, the question would be solved; but it needs no explanation why such experiments must be out of the question. The discovery of a bacteria in syphilis might one day help us to the solution.

As it is I think that my results, even when there are no unassailable evidence, must lead to a conjecture supporting the theory of the gradual invasion of syphilis from a local focus. Analogy, as well from cancer as particularly from tuberculosis, points in the same direction. I might merely mention the well-known experiment of Cohnheim, where tuberculous matter, inoculated behind cornea, was resting seemingly inactive for twenty or thirty days, and then suddenly became the starting point for an evolution of tubercles on the iris and then spreading over the whole organism.

The exact point of time when the disease from local becomes universal cannot be stated, and may perhaps never be; but from my experiments one might be allowed to conjecture that it is somewhere in the second incubation, and that in some cases it can be as far as three weeks or more distant from the first appearance of the initial induration.

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## *CANCER OF THE TONGUE; WITH ESPECIAL REFERENCE*

### TO ITS ÆTIOLOGY AND TREATMENT BY OPERATION.

READ BEFORE THE MEDICAL SOCIETY, LONDON.

BY FRED. BOWSEMAN JESSETT, F.R.C.S. ENG.
Surgeon to the Cancer Hospital.

[Concluded from the April number.]

IN 1854, Chassaignac suggested an incision above the hyoid bone and the passing a wire or chain of an écraseur around the tongue. In this year also Middledorf introduced the galvanic écraseur. In 1866, Mannely first adopted Chassaignac's écraseur in this country.

In 1880 Kocker adopted a method of opening the mouth from behind and below the angle of the jaw to reach the base of the tongue and remove with it the tonsil, soft palate, or any other parts that may be affected. Whitehead, of Manchester, about this time, suggested removing the tongue by means of scissors, and at the same time Bilroth suggested the same operation, with the exception that he ligatured the lingual arteries first.

Morrant Baker has lately reintroduced the plan of splitting the tongue, removing either half with the écraseur. He also places a liga-

ture around the portion last in the loop, as he finds the lingual artery is always to be found there.

Mr. A. Barker, in extensive operations, suggests that tracheotomy or laryngotomy should be always performed before the removal, and used Trendelenburg's tracheotomy tampon canula. He afterwards plugs the pharynx with a large sponge, with a string attached to prevent any blood getting either into the stomach or larynx. He thinks by this method there is less risk of septic pneumonia following the operation.

In all ordinary operations the back of the mouth can be easily plugged with sponges without tracheotomy being performed.

To Chassaignac we owe the introduction of the écraseur, and it was not until this instrument was brought to the notice of the profession that surgeons dared to remove the tongue through the mouth without an external wound.

It is to the relative merits of removing the tongue by this method, as compared to removal by scissors, that I wish now to draw your attention.

The methods now most in vogue for removal of the tongue at present may be divided into three groups, viz., the removal by the wire or chain or galvanic écraseur, either by unilateral or bi-lateral ablation; the removal of the organ by incision, *i.e.*, by the knife or scissors; and, lastly, those cases in which, from the extent of the disease, a more extensive operation is required, such as Symes's, Negnoli's or Kocker's.

In deciding if we are justified in operating in severe cases, we must be guided to a great extent by statistics.

Mr. A. Barker has collected 170 cases, and found in only 17 had the patient been free from a recurrence of the disease at the end of a year. In 210 cases he collected, the death-rate from various causes was 16.9 per cent. Of the 50 cases operated on at the Cancer Hospital during the last three years 8 died, or at the rate of 16 per cent., while of the 244 cases recorded by Gross 56 died in consequence either directly or indirectly of the operation, being at the rate of 22 per cent. Dr. Schäpher, in 50 cases, lost 11, or 22 per cent., and at University College Hospital, out of 21 cases operated on, 8 died, or a rate of 38 per cent. Thus the death-rate after the operation appears to be high. Doubtless many of these cases were operated upon not so much with a view to cure the patient as to relieve him of a mass of disease, which was rendering his life unbearable from the pain and loathsome nature of the disease. On the other hand, no doubt, many had been greatly comforted by the operation, although their days had not been prolonged.

To arrive at some kind of conclusion as to the best method to adopt in excision of the tongue, I have collected from the medical journals all the cases I can find reported for several years. I have also communicated with Messrs. Barwell and Gaul, who advocate the use of the écraseur, with Mr. A. Barker, who advocates the performance of tracheotomy in many cases before removal, and with Mr. Whitehead, who was the introducer in this country of the use of the scissors. To all these gentlemen I tender my sincere thanks for their courtesy in replying to my letters and furnishing me with what information they could on the subject. I have also collected and examined the records of the cases that have been operated on at the Cancer Hospital during the last two or three years. The results of my investigation are not so satisfactory as I could wish, but still much may be gathered from them.

For instance, we read in one paper an account of the difficulties and dangers one operator experienced in removing the tongue by the Whitehead method. In the following week another surgeon states he has never seen any dangerous hemorrhage arise during the operation performed in this way. Then again one surgeon contends that the écraseur, either wire or galvanic, leaves a lacerated, sloughy wound, which exposes the patient to much greater risk of septic poisoning than if the organ had been removed by incision.

Professor Stokes, in alluding to this subject in his paper, read at the Clinical Society in 1881, alluded to the cases operated on by Dr. Schäpher and Collis. The former surgeon, in 31 cases in which he removed the tongue by the écraseur, had only 3 deaths from septic causes, showing a percentage of only 9 per cent. of deaths; whereas, in 10 cases in which he removed the tongue by incision, he had 6 deaths from septic complication, or at the rate of 60 per cent. Dr. Collis had very similar results, as in 20 cases in which he removed the organ by the écraseur he had no deaths, whereas in 13 cases in which he removed it by scissors

he had 8 deaths, or at the rate of 61 per cent. Mr. Barwell has furnished me with the results of his 14 cases removed by the écraseur, in which he lost none. Mr. Gaul 10 cases removed by the buccal operation and écraseur, with no deaths.

On the other hand, Bilroth's experience seems to have differed considerably from that of the above-named surgeons, as he has nearly abandoned the use of the écraseur and adopted the method of removing the tongue with scissors, ligaturing the lingual arteries first.

Mr. Whitehead has, in answer to my inquiries, most courteously furnished me with the results of his operations. He has removed the entire tongue 58 times, viz., 48 times by scissors and 10 by the galvanic écraseur. Of the 48 cases of the removal by scissors he lost 9, or at the rate of 18.7 per cent., but he explains this apparently high mortality to the fact that he frequently operated upon very advanced and hopeless cases at the request of the patients themselves, solely with a view to remove from the mouth a loathsome mass of disease, and with a prospect of lessening pain. He attributes the deaths of these 9 cases practically to septic poisoning.

The conclusions to be drawn from the above observations are: 1st. In all cases seen early of small nodules or ulcers, that do not speedily improve or disappear by treatment, they should be excised as early and as freely as possible. The best plan of doing this is undoubtedly by means of the knife or curved scissors, taking care to cut well into the healthy tissue. Should any hemorrhage occur the cautery will usually stop it.

2. The écraseur is applicable to the class of cases in which the disease is limited to some portion of the anterior part of the tongue, and here I unhesitatingly would adopt Mr. Morrant Baker's operation of splitting the tongue down the middle and removing the diseased half by the écraseur, adopting his precaution of placing a ligature around the last part included in the wire. Should both sides be affected, I should still split the tongue and remove each half separately, as by this means you can remove the parts much further back.

3. When the tongue substance is thoroughly infiltrated with the disease extending far back, it becomes a question whether the scissors or écraseur should be used. If the latter, the plan proposed and practised by Mr. Barwell is, in my opinion, the one by which the best results may be expected, as by it undoubtedly the wire can be placed thoroughly well behind at the root of the tongue. The buccal operation also gives much more room for the application of the wire well around the disease. But the length of time occupied in the removal and the almost impossibility of guiding the wire so as to embrace the whole of the disease appears to me the great drawback to this plan of treatment. Messrs. Whitehead and Bilroth's operations have in this class of cases very decided advantages, as they enable the surgeon to keep as clear of the disease as it is possible, and if care is taken to snip very slowly and keep the mouth well wiped out with dry sponges there is very little risk of hemorrhage. Care should be taken when approaching the lingual arteries to be ready to seize them with clamp forceps and tie them at once.

I have seen as much if not more hemorrhage during the use of the écraseur as I have during the removal by scissors. I have, however, on one or two occasions seen most violent hemorrhage during the removal by scissors, and I found it impossible to secure the lingual at the bleeding point and was obliged to tie the artery by external incision; another case at which I was assisting a year ago the same thing occurred, and the patient's life was in serious danger. Mr. Treves also relates a case in the Lancet, in which he had the greatest difficulty in arresting the hemorrhage. Under these circumstances, therefore, when the disease extends at all within the floor of the mouth it would be always wise to adopt Bilroth's method and preface the operation by ligaturing the lingual arteries. The surgeon would then be very much more at his ease and better able to snip away the whole of the disease. He can by the same incision, also, that he ties the arteries, remove any glands that may be affected. *The advantages claimed for this method are rapidity of removal, greater precision in removing the diseased parts, and a less risk of septic infection after the operation.* The first two points are clearly established, but the latter I cannot find sufficient proof of; in fact, on referring to the statistics, the evidence is certainly strongly in favor of removal by the écraseur.

The claim to rapidity and precision in removal are two most important points, which must have great weight with all in deciding

upon the best course to pursue in any case. If the patient is low and emaciated, is it wise to keep him for so long a time under the anæsthetic as is necessary for the proper removal of the tongue by the ecraseur? The advocates of this plan would answer yes, for by this method they would argue no blood need be lost. Granted such is generally the case, it is not always, and I contend by means of removal by the scissors very little blood need be lost if the operation is done slowly and leisurely, and care taken to ligature the linguals directly they are divided. Mr. Whitehead tells me he has excised the tongue on numerous occasions by means of scissors without having to ligature or twist a single vessel, and there has been no hemorrhage, either primary or secondary. He, like myself, has witnessed more severe hemorrhages after removal by the écraseur than by the scissors.

4. Where the disease implicates the whole of the floor of the mouth, and the gums, the tonsils, and the submaxillary glands are affected, then the only operation which can be expected to remove the disease are either Sédillot's, Negnoli's or Kocker's, and in some cases when the disease has not extended to the cervical glands either one or the other of these operations may be performed. Here again much discussion has arisen as to the best method of removing the diseased parts after they are separated from the jaw and drawn down through the opening. For myself I think it matters very little; undoubtedly with the scissors the surgeon is better able to remove the disease more thoroughly, but in all these cases it is well-nigh impossible to remove it all. I should prefer the scissors, as the parts can be much more quickly removed and any bleeding parts are then easily taken up and secured.

In all cases, after the operation, I wash the mouth out most thoroughly with strong antiseptic solutions, either carbolic acid or perchloride of mercury solution; I then dust it thoroughly with iodoform, and in very severe cases plug the wound with carbolic gauze, in fine strips, soaked in spirits and dusted with iodoform; this forms a firm plug; it remains for about three or four days, when it can be removed, and a healthy granulated sore is found. I never feed a patient by the mouth for at least three days, only feeding him with nutritious enemata. The mouth is kept constantly washed out and irrigated with weak solutions of carbolic acid.

## *CLINICAL HISTORY AND TREATMENT OF "LICHEN RUBER."*

BY DR. P. G. UNNA, HAMBURG, GERMANY.

[Translated by Prof. HUGO ENGEL, M.D.]

[Continued from last number.]

CASE VIII.—Mrs. L., æt. 68, a woman, considering her age, remarkably strong and well developed, and always enjoying good health, excepting a few rheumatic attacks, was sent by her physician, June 27, 1881, to my clinic, on account of an eruption which six weeks previously had suddenly made its appearance over her whole body. Her body showed the small papulous form of "lichen ruber," evenly disseminated, and accompanied by such an intolerable itching as to greatly deteriorate the patient's general health. Only on hands and feet a few isolated spots of greater dimensions were observed, and they itched less than the pointed papulæ of the trunk. There was no eruption on the head and palmar surfaces of hands and feet. Inunction with ungt. zinci benzoat., 500; carbolic acid and olive oil, āā 20; and cretæ, 10, was practised from the very beginning, and greatly relieved the itching. At the same time twenty drops were twice daily administered of sol. Fowleri, 10; aq. cinnamomi, 70; syrup. cort. aur. 10. June 30th, tar was added to the salve for the sake of experiment (ol. cadini, acid carbol., āā 10; glycer., aq. calcis, āā 50; adipis, 400; boli albi, 200), but without any result as regards the quicker involutions of the papulæ. The first salve was, therefore, resumed, while the dose of arsenic was increased but slowly on account of the great sensitiveness of the stomach. The papulæ now rapidly involuted, but a few large bullæ showed themselves on the dorsal surfaces of both feet. I considered their formation as due to the scratching, but the patient positively denied this. I had, meanwhile, became convinced of the value of corrosive sublimate in "lichen ruber," and July 20th the following salve was ordered to be rubbed into the skin all over the body: Ungt. zinci benz., 500; acid. carbol. ol. olivæ, āā 20; cretæ, 10; sublimat., 0.5 Within four days all the eruption disappeared. Fowler's solution was still continued for a month after the discharge of the patient from the clinic, and then stopped, on account of catarrh of the stomach. An examination of the patient, now seventy-one years old, three years later, proved her robust and

healthy, and free from skin eruption; the rheumatism also not having reappeared.

As the bullæ had developed on the place of the flat papules I ascribed them to scratching but the next case convinced me differently.

IX.—M. K., æt. 17, is said as a child to have often suffered from a vesicular eruption, which especially made its appearance whenever he visited a relation in another city (impetigo contagiosa?). The last time the eruption showed itself was in 1880, one day after his departure for that city. Besides, there was said to have existed since 1881, on his back, a squamous spot (lichen planus,? psoriasis?) which had been treated with sulphur-tar soap. Three days after the family had moved to N. the vesicles again made their appearance in the face, but this time papulæ were also observed on the dorsal surfaces of the hands. Under a varying treatment these papules first spread over the upper and then the lower extremities. The vesicles in the face partly healed, but fresh ones always reappeared. August 8, 1881, this young and vigorous man entered my clinic with a multiform universal exanthem.

The main type was a papulous eruption, most prominent on the abdomen and trunk. Here they were small, conical, and pointed, while on the extremities they presented broader, wax-like scaleless, larger papules, and on the forearms and dorsal surfaces of hands they assumed the look of still larger, flat, red spots. In the face only the latter variety could be noticed, and here they evinced the tendency to cover themselves with small vesicles filled with a yellowish serum. The face-eruption made, therefore, the impression of an impetigo contagiosa or a pemphigus, but I did not hesitate to diagnosticate "lichen ruber," as most of the papules had the characteristic features of this skin disease. The general health in this case was good and the itching insignificant. August 15th he was placed on the carbol-sublimate inunction cure, and the vesicles yielded to its influence as well as the papules. Within three weeks most of the eruption had disappeared; only in the face and on the dorsal surfaces of the hands several times a fresh crop of vesicles showed themselves. The inunction cure evidently had a more rapid effect on the larger papules, and sublimate baths were, therefore, administered, and for the hands special applications of lead-water were made, the latter having two per cent. borax and two per cent. sublimate added to it. Under this treatment everything finally healed, and after six weeks the severe pigmentation, which had followed the exanthem, and given the skin a spotted appearance, had also ceased, and the patient was discharged completely cured.

A still greater tendency to the formation of vesicles was evinced by the following case, which is specially instructive on account of the varying treatment, and the ultimately established, definite cure.

X.—Mrs. V. S., æt. 33, of graceful build, easily excitable, nervous temperament. As a child has been weak and anæmic, and later suffered frequently from dyspepsia and attacks of gastralgia after meals. Menstruation beginning at her thirteenth year, used to be irregular, very moderate in quantity, and painful. She married in 1873, and in 1874 gave birth to a healthy child. After this the menses appeared more regularly, and her anæmic, as well as her gastric complaints completely vanished There only remained a certain nervous irritability, and—probably in connection with it—an exfoliatis areata linguæ, which was present since childhood, and which used to evince some improvement during the monthly period. In 1876 the patient became afflicted with a skin eruption, which, notwithstanding continuous treatment, lasted during five years, and was still present when she entered my clinic, February 10, 1881, where she remained until her complete recovery in September, 1882. The case was one of universal lichen ruber planus. Brownish-red, mostly round spots from the size of a pea to that of a cherry, covered the skin of arms and legs at intervals, while shoulders, chest, and abdomen were thickly strewn with them. The face was free from them; on the hairy part of the head were many smaller red spots, *which from time to time changed to vesicles*. Some spots were indented, others evinced in their centre a bluish-white point, which as a horny mass could easily be lifted from under the transparent scale. Others again were covered with thicker masses of scales, so that the usual character of lichen was here absent. The treatment, which was frequently changed, mainly was as follows:—

The first period includes the time from February 10, 1881, to end of April of the same year. Daily four drops of Fowler's solution were injected subcutaneously; altogether more than sixty injections being made. Occasion-

ally during this period five or even six drops were used, but on account of the pain caused by the stronger injection, and because several times the first indications of arsenical poisoning made their appearance, I had always to go back to the dose of four drops. After the patient had nobly suffered this painful procedure during all this time, I had to give up the treatment without having achieved more than a transient improvement, and that but partly. I now, besides the internal administration of arsenic, proceeded to the application of external means.

This second period occupied the time from May to December, 1881. This treatment in the patient's own house had also no other effect but an improvement of her general health and a very moderate change for the better in her skin eruption. It was impossible to carry on an inunction cure successfully and methodically. Repeated new crops of the exanthem on the hairy covering of the head especially gave the patient a great deal of trouble, mainly on account of the rich growth of hair. It was on December 14, 1881, that the patient ultimately concluded, for the purpose of a radical cure, to enter my clinic. I had formed the plan to remove by surgical means the oldest and worst efflorescences all at once, and I therefore began the treatment in this period by scratching off about thirty spots with the sharp spoon; at which procedure the tough consistency of the papules really surprised me. Gauze bandages covered with the salve were then applied. The cure was a complete one, but scarcely a week later the scraped and healed spots had already again changed to typical lichen papules. This fact thoroughly convinced me that in "lichen" no such result can be obtained from the application of the spoon, as is the case in lupus. I now continued to apply gauze bandages impregnated with more intensely acting salve to the papules and to prevent the formation of lichen-plaques by sublimate baths. This fourth course of treatment brought about a complete cure within a period of three weeks. I caused the manufacture of strong arsenic-mercury gauze, to which creasote was added (carbolic acid being too volatile for this purpose) to prevent too much suppuration, and morphia to subdue the pain. The gauze was gradually increased in strength, the numerical relations of the parts being as follows:—

| | Arsenic. | Mercury. | Creasote. | Morphia. |
|---|---|---|---|---|
| I. | 80 grs. | 80 grs. | 80 grs. | 16 grs. |
| II. | 160 " | 80 " | 80 " | 80 " |
| III. | 320 " | 80 " | 80 " | 160 " |

Per roll (1-5 [] met. = 2000 [] ctm.

The final result for all parts of the exanthem was their painless and complete necrosis. After the necrotic parts had fallen off the wounds healed with remarkable rapidity. The effect of the morphium was so severe that for many days the patient continued in a somnolent state. The effect of the mercury, as concerns the gums, was already apparent after the first four days, and had to be energetically subdued and counteracted by astringent washes. A general constitutional side effect was not observed either of the arsenic or of the creasote; but their whole effect became clearly visible also in such places, which, as those in the hairy covering of the head, did not at all come in contact with the salve.

In the beginning of February, 1882, all lichen-plaques had been destroyed by necrotic processes; and by the middle of February they were all covered with a smooth skin and presented pale, bluish cicatrices, scarcely visibly depressed. But this result did not end the whole morbid process. Upon many of these spots, without the least apparent external cause, vesicles formed nearly of the same size as the papules had been—some of which were even much larger than those which had first made their appearance on the head. The complete cure of the case was postponed in consequence for several months. Astringents, as tannic acid and nitrate of silver, were tried in vain for a long time, but ultimately I succeeded in establishing a final cure by tan baths and my acetate of lead salve. Two and a half years later, in September, 1884, I convinced myself that the cure had really been a complete and final one, and the once irritated and melancholic patient had been changed to a healthy and lively woman.

Two explanations for this late formation of vesicles may be offered. Either the treatment caused them or we had here a natural tendency of certain types of "lichen" to the formation of vesicles, needing only an opportunity to evince itself. As the vesicles formed during the whole course of the disease on the hairy covering of the head, I incline to the second opinion. Besides, if the mercury-arsenic plaster had been responsible for the vesicles, they would have

been also produced on other parts of the skin which were exposed to the influence of this salve. But they exactly coincided in their size with the cured "lichen" spots, and were smaller than the size of the plaster applied. We have, therefore, to attribute the formation of vesicles in the depressed cicatrices of cured "lichen" spots to a special tendency of lichen planus.

In the three cases reported, these vesicles had made their appearance at different times and long before treatment had been commenced. Another proof in favor of the theory advanced.

Case X., however, has a special value besides in a phenomenon, thus far completely overlooked by the English and French, who both possess the most experience in lichen planus. I mean *the whitish spots* of this form of "lichen."

I have never seen them clearer and more numerous than in Case X. Neumann, who first described them, has noticed them only at the periphery of the plaques, while I have observed them in the centre as well. They are characteristic, not only of lichen planus, but also, though rarer, of the obtuse papular form, where, however, they are met with only in the centre and only in the form of one bluish-white point in each papule. These points correspond to the sweat follicles and are composed of several horny layers. For their better illustration I give in the following an extract of the history of such a case.

XI.—A lady, æt. 40, had noticed for a considerable time on arms and legs some dark-red, smooth, planus efflorescences, but without her attaching any importance to them until in 1882 a universal eruption of large obtuse papules set in. After Asiatic pills had been vainly administered for a long period, the papular eruption was cured within the short time of three weeks by the inunctions with zinc carbolic sublimate salve. Last spring a worse relapse took place, probably caused by a few papules in the lower part of the back, which had escaped observation and not been thoroughly healed, the treatment not having been instituted in my clinic but at the house of the patient. I noticed, during this relapse, that whenever the obtuse papules had reached the size of a split pea there appeared in the centre of each a bluish-white point, which could often be removed from its bed without any bleeding, as a horn-pearl of the size of a mustard seed. These points served also as an indication for the cure, for as long as they existed the papules could not be considered destroyed. Under the application of gauze impregnated with arsenic, sublimate or salicylic acid, or of collodion, to which the drug had been added, these points fell off and there remained a sharply-defined diminutive hole. In the beginning large doses of arsenic were administered and a local treatment, limited to the course suitable for an outdoor patient, accompanied them. No result being obtained, I applied a kind of zinc glue containing 10 per cent. sublimate.* This rather painful application brought about the disappearance of the papules, but continually new crops showed themselves. Finally the patient concluded to pass through the whole carbolic sublimate inunction cure in bed, and thus the opportunity offered itself to test the effect of this treatment on a grave case of obtuse "lichen." Already, on the second day of the inunction cure, no new crops appeared; the more recent papules rapidly dried up and the older slowly healed. Towards the end of the cure the whole eruption had vanished with the exception of three or four of the oldest papules, which resisted even the inunction, and ultimately yielded only to the application of collodion, to which chrysarobin and sublimate had been added. The plaster gauze of mercury and arsenic, applied in Case V., had also been tried in this case for a short time and evinced some effect. Finally I made an observation in this case, which may not be void of importance regarding the etiology of the disease.

One night a cat had sneaked into the bedroom, and while the patient made an effort to chase the animal out she received some long, though superficial, scratches on the abdomen. Directly under my eyes there developed themselves on the cicatrices, which had just healed, lichen-plaques of a very unusual kind. They simulated in their shape exactly the scratches mentioned; therefore analogous to the psoriasis papules, which may be artificially produced in previously determined limits.

[To be continued.]

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THE semi-annual Conversational Meeting of the Philadelphia Pathological Society, was held on April 16th. The feature of the occasion was the scholarly and practical address of Dr. George M. Sternberg, Major and Surgeon United States Army.

* Oxide of zinc sublimate aa 20. adipis, gelatin aa 40, glycerin 80. M. ft. gelatin.

## AN UNUSUAL CASE OF EXTRA-UTERINE PREGNANCY.

BY WILLIAM R. D. BLACKWOOD, M.D.
Neurologist and Electrician to the Presbyterian Hospital.

EXTRA-UTERINE pregnancy is a condition not yet fully studied or well understood, and one of unusual interest to the general practitioner into whose care at any time a case may fall. No graver or more terrible complication of pregnancy can happen to woman, and it therefore behooves us as guardians of our families, whose well-being and whose very lives are in our hands, to aid in establishing such data as will render the diagnosis and the treatment of this abnormal state more certain than it is at present. To this end it is well that all available cases should be reported, no matter how they terminate, and whether or not they reflect credit on the medical attendant, for it is apparent to all who read that the great mass of reported histories of all kinds and degree are those in which the doctor is covered with glory and the patients all get well, whilst much more valuable lessons might evolve from honest confessions of our failures had we the courage to present them, and thus bring to bear the criticism and suggestions of our *confrères*. Whilst the case now to be narrated happily terminated in recovery, I feel that to some extent I fell short in not sooner recognizing the actual state of affairs, although circumstances may plead in extenuation, and "all's well that ends well."

Mrs. —— has been known to me from her childhood. She is connected with my family by close relationship, and I have been her physician for more than twenty years. She is a lady of unspotted reputation, a consistent Christian, a loving, endeared wife and mother. She had typhoid fever at twelve, a good deal of ovarian neuralgia for some years after the war whilst I was stationed with the army in the South, and since my return after losing the neuralgia she had a tendency to menorrhagia, which required treatment once or twice a year to check it. She was the mother of two children previous to the event now to be related.

A recurrence of the menorrhagia in December, 1883, demanded treatment, which I carried out by thorough intra-uterine applications twice a week of the following mixture, a favorite with me.

| | | |
|---|---|---|
| ℞. | Iodine resublimat. . . . | ʒij. |
| | Potassii iodid. . . . | ʒij. |
| | Acid carbolic cryst. . . . | ʒij. |
| | Glycerin . . . . | fʒiv. |
| | Tr. iodine . . . | q. s. ad fʒij. |

M. Sig.—To be used only by the physician.

The uterus was kept well condensed by faradism applied daily—one pole by a sponge rheophore externally over the fundus, the other by an insulated metallic rheophore per vaginam—and she menstruated normally in the first week of January, 1884. The uterus was four inches in depth, patulous, and was well swabbed internally and painted over the cervix externally during treatment. Pregnancy occurred on the 8th of January, and this is *positive*, intercourse not having occurred for a month previously and never since that date. She menstruated as usual in December and in the anterior months of 1883. The intra-uterine treatment was resumed on the 15th of January but the electricity was suspended, condensation being now well secured. Pregnancy was, of course, neither known nor suspected until later. Early in February severe abdominal pains, presumed to be neuralgic, were inaugurated and treated by morphia. These were diffused at first, but later they were discovered to be uterine, and the local applications were discontinued as being possibly the cause of uterine colic, the fallopian tubes on either side being overdilated perceptibly, and the way therefore was open to transit of the caustic toward the peritoneum. Since menstruation ten thorough applications of the mixture had been made, *and the uterus, I know, beyond question, was empty.* To my utter surprise, and more, to my horror! morning nausea, mammary pains and engorgement evidenced pregnancy, and the usual signs confirming the fact had been evident to the patient unknown to me. No examination, however careful and thorough, detected the presence of the embryo. The abdominal walls were well filled with fat and obscured at this time the true condition. By the 1st of March the lady several times felt, above the right groin, a globular mass the size of a large walnut. This for a week I could not detect, but then it was found. The mass was movable in any plane, not at all tender, and it was undeniably a tubal pregnancy. I had again employed electricity freely during this period, though not definitely, in the absence of any sign accurately locating the embryo, but now

galvanism and induction currents were brought to bear directly upon the mass, and I carried these far beyond anything yet recorded in such cases. Rockwell and others hesitated going beyond from sixteen to twenty-four volts. Before ceasing my efforts I carried the current up to fifty-nine volts.

In the course of a few days after locating the tumor it disappeared, and attacks of extreme weakness led me to suppose at first that rupture of the tube had ensued, the hemorrhage, however, being soon arrested, or that the embryo had escaped from the fimbriated extremity; the mass now being free in the abdominal cavity and somatic death assured. Neither the patient nor myself could detect the body through external palpation, nor by the vagina or rectum. The uterus was retroverted more than usual just then, but in two weeks more it assumed its normal position, *and the mass was once more easily found, but it was more central in location!* The sound showed the womb to be empty, and I could thrust that viscus to the left with the instrument in my right hand whilst grasping the enlarged embryo with my left and holding it toward the opposite iliac fossa. My spirits had risen when I supposed the mass to be abdominal, even though it were to develop to term, but now all my anxiety returned with redoubled force, for the truth undoubtedly was that a long fallopian tube had fallen backward out of reach with its contained embryo, dragging the uterus into temporary retroversion, but the womb had again resumed its normal position. I had been mistaken as to the rupture or escape by the ovarian end, and the body was evidently still tubal and moving toward the uterus. How long would this continue without rupture? What hope had we of safety? We know that death of the mother is almost inevitable upon rupture, and many unfortunate women in the past have died suddenly from this cause without the fact being discovered or suspected in the earlier weeks of pregnancy. I had prior to this successfully treated two cases of extra-uterine pregnancy by electricity, but my efforts here were apparently futile, and I feared rupture under my hands at every moment. To heighten the involved difficulties the patient knew that something was wrong, but I could not tell her nor her mother what the difficulty was lest alarm should render worse an exigency already bad enough. By the middle of April the fœtus was almost in the median line, but the womb was yet empty and crowded toward the left. I could still introduce my hand edgewise between the two masses. Hypogastric pains recurred now with terrible severity, and motion was clearly apparent in the tumor. The lady would not see any consultant unless absolutely compelled, and preferred to die in my hands if such were likely to happen. At the end of April the fœtus had entered the uterine cavity proper, and the internal os now closed, it having hitherto been patulous under repeated gentle examinations with the sound. So far all was well, but now came a difficulty, the outcome of which I could not foresee. We were safe as to the relief from an extra-uterine fœtation, but the galvanism had almost literally destroyed the abdominal muscular walls, the fat was totally absorbed, and the uterus was thinner than any which I have ever seen—it was about as thick as two or three layers of blotting-paper only! The thinning progressed until it seemed as though the womb must rupture, from the growth of the child. The electricity was stopped before this complication had attracted notice.

The general health of the patient was now getting better—the crisis was largely averted, and did the atrophy not persist, or should it be happily replaced by a better development, all would yet be well. The summer passed without much discomfort, the patient traveling as far as Cresson without injury. Slight anasarca was shown without albuminuria, and backache was, toward the close of pregnancy, quite severe. I had spoken to several professional friends as a relief, and when November appeared without labor ensuing (then fully due) I got the lady's consent to call my friend Dr. Albert H. Smith in to see her, and previously explained the case to him. He was loth to believe that a tubal pregnancy could terminate as I have described, and believed that rupture of the tube must ensue before the uterine dilatation could be accomplished. I did not myself agree with our distinguished *confrère* on this particular point, because the dilatation of the uterus or its cornua would necessarily be *physiological*, as in ordinary pregnant progression, but I felt in the absence of previous personal knowledge, and in the default of any anterior parallel case on record, his difficulty in believing the fœtus to have traversed several inches of a slender, delicate tube without rupturing it, and, additionally, the tube must have

been diseased, else inflammatory adhesion, more or less, would not have arrested the ovum in its journey toward the uterus at the outset. Still we have the fact of extensive dilatation of the tube under dropsy, and it *is* undeniably susceptible of distension to some extent in any and probably to a considerable degree in other persons. Dr. Smith mapped out a normal first position vertex presenting, a small child, and little water. He admitted the extreme tenuity of the uterine and abdominal walls, but hoped that all would go well when labor set in. He was very busy at the time, was taken ill soon thereafter, and did not again see the lady, although he kindly volunteered to assist me at any time.

During the latter weeks of pregnancy a better development of the muscles was observed, but when labor occurred they were very much thinner than anything in my experience, and I have seen a large number of confinements. Labor did not happen till the middle of December, *fully six weeks beyond term*, but the act was in every way normal, short and easy. There was not more than two ounces (if that much) of liquor amnii; the child weighed ten pounds all but one ounce, and the only drawback was a leaning toward *post-partum* hemorrhage, controlled by ergot, pressure, and grasping the uterus firmly for half an hour or more. Dr. E. W. Watson kindly relieved my anxiety by remaining some time with me, and, as I have an uncontrollable dread of *post-partum* hemorrhage and a growing dislike to obstetrics of late years, although I have never lost a case by death from this cause, and but two from puerperal peritonitis, his assistance was very welcome. Convalescence was good, and despite some painful points over the cornua, particularly on the right, my patient was down stairs in less than two weeks. She was up on the terrible ninth day, and, by the way, who knows what the dreadful bugaboo is on that fateful day? A subsequent leaning toward subacute peritonitis was checked by morphia and local application of iodine. In a month my patient was out shopping, and she is at present in excellent health, and so is the baby.

The points of interest are: First, Was the fœtation extra-uterine? To this I answer unhesitatingly *yes!* I repeatedly explored the uterus with a long sound up to the fundus, and turned the point of a slimmer instrument into both fallopian tubes, for half an inch on the left and an inch easily on the right. This was done when the rational signs of pregnancy were evident and after I could grasp the embryo as a mass whilst in the tube and distant from the womb fully four inches. I watched the development of the tumor and its transit to the uterus daily, and with extreme interest and care, till it reached its normal home. About the beginning of the third month I felt the dilatation of the right cornua and cannot be mistaken about the facts thus observed. An extra-uterine fœtation being destroyed by electricity and followed by a normal pregnancy was impossible. No sexual intercourse was attempted after January 8th. This is strictly true, I know. The whole matter to me is clear, although I admit its apparent impossibility and do not know of anything approaching the case in its peculiar details.

Why did the battery not destroy the embryo? To this I plead ignorance—I do not know. I do know that every effort was made to obtain full effect; the current strength was enormously in excess of that known to be effective in such cases; the battery was in excellent condition; the electro-motive force was measured by accurate tests; and I am reasonably familiar with electro-therapeutics and physics of the current, particularly in galvanization of the abdominal and uterine organs. The effects of the applications were to cause absorption, as is sometimes done by electricity in thoracic or abdominal dropsy, of the liquor amnii almost entirely; the muscles were atrophied just as they have often been destroyed experimentally by me through excessive galvanic force long continued, and the plantar cramp and referred sensations in the distribution of the sciatics, was pathognomonic of undue nerve stimulus, for a long time. The fœtal envelope somehow (how, I don't know) resisted the current, although it was fully encircled by large rheophores externally and a closely applied rheophore behind it in the rectum, or beneath it in the vagina. Experiment on animals which abort easily (such as rabbits) and others, as dogs and cats, has taught that a normal pregnancy is untouched by electricity unless the current is carried to the fœtus by intra-uterine rheophores, and of course the mechanical effect then would be sufficient to produce abortion without the electricity. I use electricity without hesitation in pregnant

women, if it be required, but do not of course employ vaginal rheophores. The current possibly meets excessive resistance by the uterine walls, or, as I suspect, more through the amniotic membrane, which is a bad conductor (the uterine muscle carrying the current around the fœtus). It may be that thus resisted by a fœtus external to the uterus, yet enveloped as it would be if normally situated within the womb, the current flowed *around* the mass, but little actually traversing it. I admit that embryos have been destroyed by electricity when at the third to the eighth week, yet in this case I can give no other hypothesis.

How did the duration extend beyond a normal term? Here, again, I am at a loss to answer. *It did*, that I know. I believe that development was *delayed* by the galvanism, at least during the first seven months, and this may have been a factor in the case, although the child grew rapidly toward the close of term. Cases of prolonged gestation are not rare; they undoubtedly occur, and in my case there is no doubt as to the extension of fully six weeks beyond the usual term. When the child reached the outer world it was mature, extraordinarily developed, and at a month old it was taken for a three months' infant by all its numerous friends. For that matter, it still is unmistakably far beyond ordinary development, mentally and physically, and wears clothes which fitted its sisters at a year old. It is an extremely bright infant, and very dear to its friends, who know its history, but particularly to me, who knows through what a terrible ordeal it has passed, and how marvellously it survived my determined, though justifiable and well-meant efforts to destroy it, when not only embryonic, but when fairly on its way to maturity.

The legal point always involved in protracted gestation is of course applicable, and would press with special force in a case like this were property involved, but no interest of the child should suffer, it seems to me, if born in lawful wedlock, whilst both parents are living at its birth. Still, law is queer, and no one knows how much might be made of a unique case such as this if money were involved, and if the child were a male and heir expectant to a large estate in countries where entail is practised, its parents having daughters only previously. Here all three children are girls.

Without stating other than undeniable facts, I relate this brief history, unparalleled in my experience in practice or in reading, and alone in its curious aspect, so far as I know from many talks with many estimable professional friends.

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Since writing the above, the opinion expressed concerning the presumed resistance of the membranes enveloping the fœtus is apparently proved to be correct by experiments which I have made, as follows:—

*Experiment 1.*—A large, living rat was inclosed between two sections twelve inches square of the abdominal wall of a newly-killed pig, air being admitted by a suitable aperture. The peritoneal surface was placed inside the sac, and the edges of the muscle turned in so as to afford good contact of muscular fibre and blood contained therein. A current of five volts, applied by two sponges, one on either side of the bag representing the uterus, failed to unfavorably affect the rodent. The current was gradually raised to sixty-five volts, which killed the animal. Fifty volts did not apparently produce any bad effect. Time occupied in all fifteen minutes.

*Experiment 2.*—A living rat was placed between two similar layers of muscle *free* from peritoneum, under otherwise similar conditions as in No. 1. The current was run up gradually, as before, and fifty-one volts killed it. Forty-five volts did not seem to trouble it much. Time, as before, fifteen minutes.

*Experiment 3.*—A rat about the same size as the preceding ones was placed between two sponge rheophores, and during fifteen minutes the current was gradually run up to forty-three volts, which killed the animal.

*Experiment 4.*—An initial current of forty-five volts was passed through a large, living rat, as in No. 3, which killed him in one minute. No amount of faradism from an *ordinary* portable medical instrument would kill in any of these trials.

The conclusion drawn from the first three experiments was that the peritoneal membrane (or any serous membrane) is a bad conductor as compared with muscle, although serous and mucous membranes are apparently good conductors when thoroughly wet. Blood is the best conductor in the human body, and muscle is at all times full of blood, and the muscle-fibre, together with the blood, therefore, conduct well. To determine the relative value of

muscle and serous membrane as conductors, the following method was adopted:—

*Experiment 5.*—A strip of muscular fibre from the *iliacus internus* was prepared by freeing it from all connective tissue, and it was twisted into a cord, the cross section of which was one-quarter of an inch; the length twelve inches. The resistance, measured under a current of fifty milli-amperes was seven ohms in a mean of five trials.

*Experiment 6.*—A strip of peritoneum free from muscle and fat was rolled into a cord similar in capacity to that of the muscle, and the resistance was found to be forty-eight ohms in the mean of five tests. A rope of mucous membrane from the same intestine exhibited very nearly similar results under parallel tests, the conductivity being slightly in favor of serous tissue. The three cords were equally moist, and careful tangent galvanometry was observed.

My deductions from the trials were similar to those of the first four experiments, and to further work out the problem the next series was as follows:—

*Experiment 7.*—A coil of naked copper wire was inclosed within a bag of muscle, being connected with a galvanoscope. No amount of current passed through the mass of muscle, produced a current in the inclosed coil, or any deviation of the needle, either when continuous or interrupted.

The wire was then replaced by an insulated coil of similar length, and no induction or deviation was found under a like strength of current.

A similar bag of muscle, lined with peritoneum, was employed with the two coils. Slight vibration was observed with the naked coil, and a deviation of five degrees with the insulated coil when make and break contact was done.

A strip of muscle and peritoneum was next wound round a wooden rod in alternate layers and surrounded by a secondary of insulated wire. The galvanoscope showed a deviation of twenty-seven degrees upon passage of a current of twenty volts through the primary coil of muscle, as before.

The inference cannot be avoided that the muscle and the membrane were of different values as conductors. The law governing induction currents shows conclusively that the peritoneal membrane acted in the latter experiment as an *insulator*, sufficiently, at least, to produce the faradic current on opening and closure of the voltaic circuit. It is plain to me, therefore, that the current as it can be applied to the exterior of the uterus, travels *around* it, as I expected long ago, unless extremely powerful force be employed, and there is, of course, a limit to the strength admissible. Inclosed, as it is, in a manifold serous envelope, a poor conductor compared with a good muscle conductor outside this, the major part of the current must needs avoid the contained fœtus, which is, therefore, safe from injury under an electro-motive force safe to its mother. I do not know positively, but I strongly suspect that electricity is used by abortionists, and unless it be applied through intra-uterine rheophores, I do not anticipate any effect from it. I have elsewhere* given my opinion of electricity in amenorrhœa, and there described my method of application by special rheophores. To insure success, I found it imperative that one pole must be intra-uterine, no matter what current was used, though, of course, static electricity would be more apt to take a direct course than either galvanism or faradism.

The embryo, when tubal, in the earliest weeks is more readily destroyed, as the electrolytic effect is greater than in a larger mass, but once the chorion and amnion are formed, I believe the effect of electricity is not great, and in my case, now reported, the fœtus was nearly three months developed before definite applications were thoroughly made, hence they failed in destroying, though they may have deferred its development.

I am not aware of any recorded similar experiments in the direction noted, previously to mine, and most of the canonical statements concerning conductivity and resistance of living tissues are simply repetitions of opinions held or published by writers, without personal knowledge based upon experiment. Many of the statements concerning this point found in books on electro-therapeutics do not agree with results obtained by myself under careful measurement, and thorough revision will some day be needed if medical electricity proposes to keep up with the wonderful progress made in the application of electricity to the arts and sciences.

246 North Twentieth Street.

* Medical Bulletin, Vol. III. (1881), p. 7–10. Therapeutic Gazette, November, 1882.

## *HYDRASTIS AND HYDRASTINE HYDROCHLORATE IN DISEASES OF THE SKIN.*

BY JOHN V. SHOEMAKER, A.M., M.D.

HYDRASTIS is a valuable drug in diseases of the skin, both internally and as a topical application. It is especially useful as a stomatic tonic and as a hepatic stimulant in cutaneous affections depending upon gastro-intestinal disorders. It is best administered in the form of the fluid extract of hydrastis, which Prof. Roberts Bartholow has shown contains all the constituents of the drug, and is the preferable preparation to use. In seborrhœa sicca or oleosa, which frequently develops from some alimentary trouble, the scaly, reddened or greasy state of the skin may lessen or disappear on the use of ten or twenty drops of the fluid extract of hydrastis three times daily. The red or white papules—black points or pustules of acne or the enlargement of the blood-vessels and tissue of acne rosacea, due to the same cause, may be relieved or cured by the internal administration of hydrastis. It is an excellent remedy to use in scrofulous diseases of the skin in patients having feeble digestion, loss of flesh and enlarged glands, with or without unhealthy ulcers. In cases of this nature it will stimulate the appetite, lessen the involvement of the skin, and assist the action of local medication in removing the disease. It has also acted in a happy manner upon some cases of lupus, sycosis, boils, carbuncles, and ulcers in which the local condition was largely due to a lack of nutrition of the system. Eczema which is so often depending upon debility or some gastro-intestinal disorder may at times be greatly relieved or cured by full doses of the fluid extract of hydrastis. In children suffering with the pustular form of this disease, known as eczema impetiginodes or milk crust, small doses of the fluid extract, from one to five drops in mucilage or glycerin, three times daily, increase the digestive power, lessen the formation of pus, and have a powerful tonic action upon the previously enfeebled system. In broken-down syphilitic subjects, especially in those in whom the alimentary canal is weak and irritable, often from alcholic excess or from the use of too much mercury or one of the iodides, the use of hydrastis is attended with marked and beneficial results.

Hydrastis may be employed alone, internally, or in some cases its conjoined internal and external use will at times be found most efficacious. The range of usefulness, however, as a topical application is even greater than from its internal administration. The fluid extract, which is the preparation generally employed for local use, has a stimulant and an astringent action on the integument, which is well-marked when the skin is denuded or inflamed. It may be used undiluted, or, still better, diluted one-half or one-third with water, oil, mucilage, or glycerine. Inflammatory affections of the mucous membrane, especially stomatitis, syphilitic lesions, and eczema are greatly benefited, and occasionally removed by the application of the fluid extract of hydrastis. The fissured form of the latter disease, which occurs around the mucous outlets, as on the lips and about the anus, on the flexor surfaces and between the fingers and toes, are sometimes rapidly improved by its use. It also exerts an efficacious action or lessens the inflammation and thickening in chronic eczema, whether involving the parts first referred or other regions. Abrasions, sinuses, ulcers, and granulations are greatly improved by the application of this remedy.

While the use of the fluid extract of hydrastis has been attended with much benefit in many of the diseases just cited, yet its employment has been open to a very great objection from the staining which follows everything with which it comes in contact. This staining power which it possesses, and which is usually imparted to the clothes of patients, is not easily removed even by washing; and the unpleasant effect that follows the employment of this drug would almost entirely preclude its adoption in private practice—where so many other elegant, cleanly, and efficacious preparations are now constantly in use—but fortunately this objection has been entirely overcome by the recent investigations of Professor Bartholow, who has demonstrated the active principle of the drug hydrastine, which can be combined to form hydrastine hydrochlorate, which has all the physiological effects of the former drug. Further, the salt so formed not only possesses all the good qualities for cutaneous applications claimed for hydrastis, but it is also perfectly free from the staining qualities of the latter drug.

*Hydrastine hydrochlorate* occurs as a fine white powder, slightly tinged with yellow, in-

odorous, but very bitter, and soluble in water, alcohol, oils, and fats. Its color, its odorless character, and its great solubility furnishes a remedy of unusual advantage for topical application in diseases of the skin. During a short experience with this preparation I have found it useful mixed with water, alcohol or fats, in hyperidrosis, seborrhœa, acne, eczema, and in ulcers.

Thus five to twenty grains of hydrastine hydrochlorate to the ounce of alcohol has a beneficial effect on excessive secretion, which may occur in the axillary or inguinal regions, or on the palmar and plantar surfaces. This same combination acts well in seborrhœa sicca, especially of the scalp, attended with loss of hair, the stimulant and astringent action of the solution lessening or relieving the irritability of the follicles and glands of the part. The papules and black spots of acne yield sometimes very rapidly to the application of the alcoholic solution of hydrastine hydrochlorate. Acne rosacea and seborrhœa oleosa, or the greasy state of the skin so often seen on the faces of young women, have in several instances improved much on an application of an aqueous solution of this drug, or a mixture of the salt with a fatty substance in the proportion of from five to twenty grains to the ounce. The ointment of hydrastine hydrochlorate, the salt being incorporated in the fat, in from ten to thirty grains to the ounce, has proved an excellent application in some cases of subacute and chronic eczema—the thickened and irritable state of the skin in the latter condition subsiding at times very rapidly on its application. It has also been serviceable in some scrofulous and varicose ulcers, used in the form of an ointment.

Hydrastine hydrochlorate, from the cases referred to in the original paper and from others now improving under its use in my care, will no doubt prove a valuable topical application, especially in diseases of the skin. Its stimulant and astringent properties may make it available, not only in the affections alluded to, but also in many others. From present experience it is better adapted for use in diseases in which the inflammation is not too active, more particularly in subacute and chronic stages. Precautions should be exercised in using it on an acute eruption, and if employed the solution or ointment should be very weak, otherwise the active stimulant and astringent effect of the salt may increase instead of diminishing the disease. It is better and much more effective, even in those diseases in which it is indicated, not to use too strong a solution or ointment in beginning the application to the skin. —*Abstract from Drugs and Medicines of North America.*

# THERAPEUTIC NOTES.

### CONTUSIONS.

To remove the discoloration and promote the rapid absorption of the blood effused by a severe contused wound, Professor Brinton recommends the following lotion:—

| | | |
|---|---|---|
| ℞. | Ammonii mur. . . | ʒj. |
| | Sodii chloridi . . . | ʒij. |
| | Alcoholi . . . . | ℥iij. |
| | Aqua . . . . | ʒiij. |
| M. | Ft. lotii. | |

### ACUTE ABSCESSES.

Prof. S. W. Gross says it is a mistake to apply a poultice to an acute abscess after its contents have been evacuated. The endeavor should be to prevent and not to encourage the further formation of pus. To do this the cavity of the abscess should be syringed out with a 1 to 1000 solution of mercuric bichloride, and the walls brought together by compresses and a bandage, and union allowed to take place by granulation. If the abscess be of large size a drainage tube should be left in for a couple of days until the serous oozing has been reduced to a minimum. The tube should then be taken out and the walls brought close together. If the healing process be delayed by the development of flabby œdematous granulations they can be stimulated to healthy action by the injection of a three per cent. solution of carbolic acid or the application of chloride of zinc gr. iij., aqua ʒj.

### PHLEGMASIA DOLENS.

Prof. Parvin says this affection generally ends in resolution under proper care, although occasionally an abscess may form, or some permanent hypertrophy of the cellular tissue remain. As the greatest danger is the detachment of a portion of the clot, and subsequent formation of secondary emboli, all rough handling should be avoided. Prof. Parvin directs the limb to be wrapped in cotton or flannel and placed in a horizontal position, and

prohibits the use of blisters or friction at any time. If the pain be severe, an application of lard and laudanum should be gently made to the painful part, or morphia employed hypodermatically. Internally, iron, quinine, and stimulants are generally indicated. The patient should be kept upon a nourishing diet, and a firm bandage applied when she begins to walk.

CEREBRO-SPINAL FEVER.

Prof. Da Costa insists upon the persistent use of cold applications to the head in the early stage of cerebro-spinal fever. Occasionally benefit will be derived from the application of a few leeches or wet cups to the nape of the neck. Internally, opium should be given to the point of tolerance, commencing with ♏xx of the deodorized tincture every two hours, and increasing to ♏xxx, if necessary, until the desired impression is produced. When opium is not well borne alone, it should be given in combination or alternately with potassium bromide.

In the later stages, when the exudation has been poured out, hot applications along the spine will be of more benefit. Only enough opium should be given to keep the patient quiet. Digitalis and stimulants should be given to support the heart if necessary, and potassium iodide and bromide to favor resolution. Systematic feeding from the beginning of the disease is of the highest importance.

ERYTHEMA NODOSUM.

Prof. Bartholow recently exhibited a characteristic case of this curious disease before the Jefferson Hospital Clinic. The patient, a girl twelve years old, had suffered for a long time from sudden attacks of œdema and rigidity of the arms and legs, accompanied by the appearance of a number of large bullæ. The attacks lasted for several hours, and were attended by almost unbearable itching. Her tongue was covered with a heavy yellow coat, her appetite was poor, and bowels constipated. As the vaso-motor disturbance here was evidently due to reflex irritation from the disordered intestinal canal, Prof. Bartholow directed her to take one drachm of phosphate of soda three times a day; also—

℞. Mangani sulphatis exsicc. gr. xx.
Quinia sulphatis . . gr. xx.
Ferri arseniatis . . gr. j.
M. Ft. pil. x.
Sig. One pill three times a day.

CONVALLARIA.

Prof. James Stewart (*Canada Medical and Surgical Journal*) says: "The only use of convallaria is as a heart tonic, in cases of failure due to organic disease. It is said to be especially operative in cases of dropsy due to mitral lesions, but its power is much less than that of digitalis. The latter drug, except in advanced cases of fibro-fatty degeneration, if properly administered, seldom or never fails of at least partially restoring a ruptured compensation.

"Convallaria, at times, acts as well as digitalis, and frequently with more promptitude, but in a considerable number of cases it is much less efficient and not unfrequently fails entirely in bringing about the wished for results.

"If the three prominent cardiac tonics were to be arranged in the order of their power, we would have digitalis first, caffeine next, and convallaria occupying the third place. Arranged according to the promptitude of their action, caffeine would be the first on the list, convallaria second, and digitalis third. Arranged according to the order of their freedom from untoward effects, caffeine would certainly hold the first place, convallaria the second, and digitalis the third."

COLD ABSCESSES.

Prof. Verneuil (Rev. de Therap.) has obtained remarkably good results in the treatment of cold abscesses by the injection of a five per cent. solution of iodoform in ether. He first withdraws the pus through an aspirator, and then forces from 100 to 300 grammes of the solution into the cavity of the abscess. It diffuses into all the recesses and sinuses of the walls, the ether becoming absorbed or evaporated, and the antiseptic agent being deposited uniformly on the pyogenic membrane, the action of which it modifies. This simple means, so exempt from danger and so easy of application, has proved highly successful, very large abscesses having yielded to three or four injections.

INTERMITTENT HEART.

The editor of the Asclepiad says alcohol is the only remedy which can be positively depended on to control an intermittent pulse. In extreme cases where there were ten intermissions every minute he has seen a total cessation of the phenomenon within five minutes

after the administration of six fluid drachms of pure alcohol in water, the circulation at the same time being rendered more rapid. This action of alcohol is so decisive that the patient himself soon becomes conscious of it, and unfortunately resorts sometimes to the remedy, to his ultimate disadvantage.

### INFANTILE CONVULSIONS.

Dr. D. Henry Chapin (American Journal of Obstetrics) strongly advocates rectal injections of chloral in infantile convulsions. Morphia will, in many cases, control the paroxysm, but it is an extremely dangerous remedy, tending to hurry the congested brain into fatal stupor. He has seen many cases yield quickly to chloral administered by the rectum. Some weeks ago he was called to see a baby fifteen months old, who had been in convulsions for an hour. The infant was lying in a deep stupor, with jaws tightly set, thumbs pressed into the palms, and having convulsive seizures every few minutes. He tried in vain to open the mouth and get down some potassium bromide. An enema was next given, but no fecal matter came away, and the water remained in the bowel. He then injected five grains of chloral in solution into the rectum. The convulsive movements became less violent and less frequent. The chloral was repeated several times, and they soon stopped entirely. The stupor remained, but in several hours it was gradually replaced by a natural sleep, and the next morning the baby was quite bright, although looking pale. In this case he could find no cause for the convulsions, but thinks if sufficient morphine had been given to control them the stupor would have ended fatally.

### ABORTIVE TREATMENT OF PNEUMONIA.

Dr. J. W. Brown (Journal of American Medical Association) has frequently succeeded in aborting pneumonia in the formative stage by the administration of—

| | |
|---|---|
| ℞. Ext. jaborandi fl. | ʒiv. |
| Spts. ammonnii aromat. | ɱxl. |
| Syrupi simp. | ʒiv. |

M. Sig.—One teaspoonful every two or three hours to induce copious perspiration.

### DIPHTHERIA.

Dr. E. H. Dennison (New England Medical Monthly) recommends the following combination in diphtheria:—

| | |
|---|---|
| ℞. Quinia sulph. | grs. xv. |
| Liq. ammonia acetatis | ʒiss. |
| Acetic acid, dil. | ʒj. |
| Aqua dist. | |
| Syrupus simplex | āā ʒiv. |
| Tincture of chloride of iron | ʒiij. |

M. Sig.—Teaspoonful every three or four hours.

### STRYCHNIA IN UTERINE INERTIA.

Dr. Wm. Stadler (Texas Courier-Record) has found strychnia to be the safest and most serviceable uterine stimulant in prolonged labor where the pains are feeble or entirely absent, the os dilated, pelvis normal, and when it is only necessary to supply the *vis a tergo*. In such cases $\frac{1}{100}$ of a grain of strychnia, repeated if necessary, not before half an hour, has always produced strong and efficient pains resulting in the speedy termination of the labor, the firm contraction of the uterus in the third stage, the easy expulsion of placenta, and the entire absence of hemorrhage.

### MERCURY IN TYPHOID FEVER.

Kalb (Berlin. klin. Woch.; New York Med. Journal) has employed this method of treatment in upward of a hundred cases, and eighty per cent. of the patients were entirely free from fever at the end of ten days. A drachm and a half of the ointment is to be rubbed into the skin of the abdomen and the inner side of the thighs every day for seven days. At the same time the patient is to take eight grains of calomel and a grain of opium every six hours, and a considerable amount of alcohol. The writer states that the temperature falls rapidly at first, then rises to its former level, and there remains steady until the eighth day, when it falls to normal. He says that he has never seen a case of salivation.

### CHRONIC INFLAMMATION OF THE EUSTACHIAN TUBE AND TYMPANUM.

Gampietro (Arch. di Otojat; Gazz. degli Ospit.) recommends the following solution, which can be applied by means of a suitable syringe:—

| | |
|---|---|
| Tannic acid | 15 grains. |
| Salicylate of sodium | 1 drachm. |
| Distilled water | 1 quart. |

For chronic catarrh of the external ear he recommends this preparation:—

| | |
|---|---|
| Laudanum | 3 minims. |
| Sulphate of zinc | 4 grains. |
| Rose-water | 6 drachms. |

To be instilled three times a day.

THE
# Medical Bulletin.

JOHN V. SHOEMAKER, A.M., M.D., Editor.
F. A. DAVIS, Att'y, Publisher.
A. L. HUMMEL, M.D., Business Manager.

Philadelphia, May, 1885.

## *THE FARCE OF ANTI-VIVISECTION.*

THE folly of the ancient days of animal worship has been almost equalled in our own time by certain pseudo-philanthropists in England. Professing an overwhelming love for dogs and frogs, and pretending to see only fiendish malignity in the investigations of medical scientists, they for years subjected the physiologists of England to such a torrent of abuse and persecution that one might well believe the days of the gods Pan and Satyr had returned again. Grave dignitaries of Church and State united with fanatics of all classes in denouncing experiments on animals as "an unnecessary and detestable practice," which "pandered to curiosity without doing anything for science," and clamored for their total prohibition. Flaming placards were posted up in the slums of London purporting to portray the tortures inflicted on animals. The populace were invited to look at "Doctors cutting up your dog alive," "Doctors baking your cat alive," etc. Every effort was made to excite the worst passions of the London mob, and if the tragedy of the Gordon riots was not re-enacted with the physicians of London as the victims, it was because the common sense of the people revolted against the hysterical and hypocritical extravagances of the anti-vivisectionists.

Parliament, however, yielded to their appeals and passed a bill which practically abolished scientific research in England. Sir Joseph Lister and other distinguished observers were obliged to go to France to continue their investigations, or to suspend them altogether.

Urged on by the success of the English anti-vivisectionists, an attempt was made by their imitators to procure the passage of a similar law in Pennsylvania. In pursuance of this purpose, they resorted to the customary misrepresentation of facts and the usual unlimited number of denials. They not only denied that vivisection ever added one laurel to science, one drug to the materia medica, ever gave one idea to the surgeon, one suggestion to the physician, one fact to the physiologist, but they lifted the veil from the future and denied that it ever could do anything but demoralize those who engaged in its pursuit.

In fact, as was wittily said by a keen observer, they denied everything except the creation of Adam and the Constitution of the United States. Their proposed bill, however, met with an ignominious defeat. Not one voice was raised in its behalf in the legislative committee to which it was referred. The common sense of the American mind not only recognizes that man is better than a sheep, but that his comfort and happiness and restoration from sickness are of infinitely more value than that of all "the delicate pet dogs" and cats in the world. Such being the case, the American anti-vivisection agitation will never be anything more than a farce. The only reason that THE MEDICAL BULLETIN notices it at all is that a few physicians have assisted to give it some slight importance. Nothing but their presence saves it from sinking into merited obscurity. It may be possible that these gentlemen are acting under a misapprehension. If so, we trust that they will carefully consider the following facts, and then renounce all connection with their former hysterical associates:—

I. THE CIRCULATION.—All of our knowledge of the phenomena of the circulation has been obtained by vivisection. Galen opened the arteries in a living dog, and Harvey exposed the heart and punctured the throbbing ventricles of several animals. Later on, the lymphatics were discovered by the examination of a horse and a dog, and the capillaries by the examination of a frog.

II. RESPIRATION.—Lavoisier demonstrated by experiments on sparrows that respiration consisted in the absorption of oxygen and the exhalation of carbonic acid, and that death ensued when the carbonic acid in the air exceeded a certain percentage. Our modern

systems of architecture, ventilation and sanitation are based upon these experiments. They of course involved the sacrifice of a few sparrows, but all mankind, with the exception of the anti-vivisectionists, will agree with Sacred Writ that "a man is of more value than many sparrows."

III. Artificial Respiration.—Two hundred years ago Robert Hook showed that a dog could be kept alive after the diaphragm and pericardium had been cut away, by mechanically inflating the lungs and then allowing them to collapse. Since then artificial respiration has been employed with success in thousands of cases. Hook employed two or three dogs in making his experiments, but the resuscitation of one new-born infant is of more value to humanity than an infinite number of dogs.

IV. Transfusion.—In 1665 Richard Lower, by transferring blood from the carotid artery of one dog to the jugular vein of another, demonstrated that death from hemorrhage could be prevented by transfusion. This operation was improved by further investigation, and is now a recognized resource in all cases of excessive hemorrhage.

V. Digestion.—All that was known of the process of digestion before the year 1822 was learned from experiments on animals. The foundation thus laid enabled Beaumont to avail himself of the case of St. Martin and perfect our knowledge of the action of the gastric juice. His observations have been confirmed and extended by further experiments on animals. All of our information relative to the bile, pancreatic juice, and intestinal secretions, has been obtained in the same way.

VI. The Nervous System.—Owing to the tireless and self-sacrificing labors of medical investigators we are now enabled to point out the diseased spot in either brain or cord with almost as much certainty as if it had previously been laid bare by the trephine or saw. This also necessitated the use of a number of animals. In this manner Galen demonstrated the conducting function of the spinal cord, and the importance of the recurrent laryngeal nerve as the nerve of voice. Sir Charles Bell, by an experiment on a dog, an ass, and a monkey showed that the fifth nerve was the nerve of sensation for the face, and that the seventh nerve was the nerve of motion. Previous to this discovery surgeons cut the seventh nerve for tic douloureux. Since then the rational operation of dividing the fifth nerve has been performed. The different functions of the anterior and posterior roots of the spinal nerves were demonstrated by Magendie upon a litter of eight young pups. The phenomena of recurrent sensibility, reflex action, the regeneration of nerves, the crossed action of the cord, the functions of the medulla and pons, the cerebellum, and the various portions of the cerebrum have also been ascertained by experiments on animals, and a new and brilliant field opened for cerebral surgery.

VII. Hunterian Operation for Aneurism.—John Hunter, by an experiment on one deer and two dogs, proved that the secondary hemorrhage which ended fatally after ligating for an aneurism, was due to the aneurismal changes in the vessel, and not to any injury produced directly by the ligature. The new operation which he then instituted by tying the artery in a sound part, saved hundreds of human lives and limbs.

VIII. Regeneration of Bone from the Periosteum.—Various observers have shown by experiments on animals, that bone will be reproduced from the periosteum when every fragment of osseous tissue is removed. Surgeons, when exsecting a bone for any cause, now leave the periosteum intact, unless it be affected with a malignant growth, and in a short time sufficient new bone is thrown out to make a shapely and useful substitute for the removed portion.

IX. Poisoned Wounds.—Physiological experiments have indicated the line of treatment to be pursued in cases of poisoned wounds, and will undoubtedly bear more brilliant fruit in the future.

X. Parasitic Diseases.—Experiments on animals have shown the relation between the cysticercus and the tape-worm, and between raw pork and trichinosis, and pointed out an infallible method of prevention of the spread of these parasites.

XI. Ligatures.—Experiments on animals have established the value and universal applicability of the various antiseptic animal ligatures.

XII. Abdominal Surgery.—Owing to the improved methods of treatment which followed Sir Spencer Wells's experiments on a few rabbits, abdominal wounds are no longer the opprobrium of surgery, and thousands of years of happiness have been added to human life.

XIII. Fever.—Experiments upon animals have shown that the high temperature of the blood is the chief cause of mortality in fevers, and thereby enabled a rational plan of treatment to be adopted, by which the death-rate has been greatly diminished.

XIV. Nerve-Stretching.—This important auxiliary to medical treatment is also the result of experiments upon animals.

XV. Hypodermatic Medication.—This invaluable method of the administration of medicines, by which life can be saved or pain relieved when all other means have failed, is also a gift of vivisection to man.

XVI. The Prevention of Splenic Fever, Anthrax, etc.—By the experiments of M. Pasteur thousands of valuable animals have been saved from splenic fever, anthrax, etc.

XVII. New Remedies.—Almost all of the modern advances in therapeutics are the result of experiments upon animals. It is by this means that the present elaborate methods of treating cases of poisoning have been developed. All new drugs are thoroughly tested upon animals before being administered to man. Prominent among the remedies which have thus been assigned to their proper place are strychnia, digitalis, carbolic acid, physostigma, pepsin, chloral, amyl nitrite, and cocaine.

XVIII. The Germ Theory of Disease.—The experiments of Köch and others in reference to the bacilli of tuberculosis, cholera, etc., need only be referred to here. The good that they have done and will do cannot be overestimated.

XIX. Antiseptic Surgery.—The diminished death-rate in public and private practice, due to the introduction of the antiseptic method of treatment is a sufficient refutation of the unblushing assertions of the anti-vivisectionists.

XX. Vaccination.—It is only by the inoculation of successive animals that sufficient vaccine matter can be obtained to prevent a recurrence of the devastating epidemics of smallpox. There is reason also to believe that the principle of vaccination can be developed so as to protect against other diseases. The investigations necessary to establish this fact will require the employment of a certain number of animals, but if the mortality of scarlet fever and other exanthematous diseases can be lessened thereby the whole world, with the exception of a few erratic fanatics, will rejoice.

Of course, we have not heard the last of this peculiar agitation. In every community there are a number of volatile individuals who are attracted by every strange device, and there are a number of others who delight in notoriety, and will endeavor to obtain it in some manner. We trust, however, that no member of the medical profession will flatter their vanity by entering into a public controversy with them. Let them rail on unnoticed, and they will finally subside in silence. We also trust that no physician will be so unwise, to say the least, as to give them aid or countenance in any form, and if a resolution tending to give them any encouragement be introduced into any medical society, we hope that it will be promptly laid on the table and not given even the quasi-recognition of reference to a committee. Life is too short, and the problems of health and disease too pressing, for time to be wasted on a worthless delusion.

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Diseases of the Eye, Ear, and Throat.—The Presbyterian Eye, Ear, and Throat Charity Hospital, of Baltimore, is now one of the largest, finest, and best furnished hospitals of its class in the United States. It contains fifty beds for hospital patients, all of which are constantly occupied, as well as a number of elegantly furnished rooms for private patients. During the year just closed 300 persons have been admitted into the hospital wards, and 4579 others have received treatment in the dispensary department. Too much praise cannot be awarded to the surgeon-in-charge, Dr. Julian J. Chisholm, and his brilliant staff of assistants, for their self-sacrificing efforts in ministering to this army of sufferers.

# MEDICAL NEWS AND MISCELLANY.

THE Missouri State Medical Society will meet at St. Joseph on May 12th.

THE Indiana State Medical Society will meet in Indianapolis on May 12th, 13th, and 14th.

PROFESSOR JAMES W. LITTLE, one of the most distinguished of American surgeons, died at his home in New York on April 4th. Though only forty-eight years old, he had long been known as a brilliant lecturer and a successful operator. At the time of his death he occupied the Chair of Surgery in the New York Post-Graduate School and in the University of Vermont.

LICHEN RUBER — CORRECTION. — Professor Unna informs us of a slight omission on page 36 of the February number of THE BULLETIN. The external application recommended on that paper should read Liq. plumbi acetatis and Liq. alumini acetatis, with a small amount of glycerine. Professor Unna considers the Liq. alumini acetatis to be the most important factor in the combination.

THE ASSOCIATION OF AMERICAN MEDICAL EDITORS.—The annual meeting of the Association of American Medical Editors will be held in New Orleans, La., April 27th, at 8 P.M., in the medical college building. The annual address will be delivered by the president, Henry O. Marcy, M.D., of Boston, Mass., on "The Legislative Establishment of Medical Examining Boards in America." Papers are expected from Dr. F. E. Daniel, of Austin, Texas; Dr. F. S. Billings, Boston, Mass.; Dr. Richard J. Dunglison, Philadelphia, Pa.; Dr. John V. Shoemaker, Philadelphia, Pa.; Dr. L. Connor, Detroit, Mich., and others. All members of the profession are cordially invited to be present and participate in the meeting, especially journalists and authors.

THE INDEX MEDICUS.—We take pleasure in announcing that Mr. George S. Davis, of Detroit, has undertaken to continue the publication of the Index Medicus on the same general plan, and with the same regard to typographical accuracy and finish as heretofore. The former publisher, Mr. Leypoldt, issued the journal during his lifetime at an annual loss of $1000. This was a burden that the executors of his estate, in justice to his wife and children, were not willing to bear. Its publication was therefore discontinued in December. So many letters of regret and remonstrances were, however, received by the editors, Dr. John S. Billings and Dr. Robert Fletcher, that Mr. Davis, with characteristic liberality, announced his willingness to re-issue the journal and assume the responsibility of its publication. The profession is to be congratulated upon Mr. Davis's public-spirited determination. The Index Medicus has become so indispensable an aid to literary medical workers that its permanent suspension would have been an irreparable loss to medical science.

DR. BENJAMIN LEE, of this city, is publishing, in the shape of short tracts for the benefit of the busy practitioner, the substance of a useful little treatise by Dr. Albert Reibmayer, of Vienna, entitled "Massage and its Utilization in the Various Departments of Medical Practice." An acquaintance of twenty-five years with this important therapeutic means enables Dr. Lee to speak with authority upon the value of this too much neglected method of treatment. The tracts will be on the following subjects, respectively: "The Art of Massage," "The Physiological Effects of Massage," "The Employment of Massage in General Practice," "The Employment of Massage in Surgery," "The Employment of Massage in Obstetrics," "The Employment of Massage in Gynæcology," "The Employment of Massage in Ophthalmology." A bibliography will be appended to each for the accommodation of those who desire to procure their information at first hand. The price will be only twenty-five cents each, including postage. We do not know of a more useful set of pamphlets, and cheerfully commend them to our readers as worthy of careful attention and the widest circulation.

DR. A. P. BRUBAKER, of this city, has been elected to the Chair of Physiology in the Pennsylvania Dental College. The Board of Corporators are to be congratulated upon the wisdom of their choice. Dr. Brubaker is well-known as a close observer, an original investigator, and a writer and lecturer of brilliant promise. He graduated from Jefferson Medical College in 1874. He was appointed Lecturer on the Anatomy of the Head, at the Philadelphia Dental College in 1878. In 1880 he was appointed Demonstrator of Physiology at Jefferson Medical College, which position he still holds. Dr. Brubaker has made many valuable contributions to medical literature. Among other papers prepared by him may be mentioned an exhaustive essay on Digestion, for a Dental Surgical Encyclopædia now passing through the press. He is also the author of the most practical compend of Physiology published in the English language. Its value and popularity are attested by the fact that it has passed through several editions within the last two years. Dr. Brubaker received the honorary degree of A.M. from Franklin and Marshall College in 1883.

## *REPORT OF INTERESTING CASES*

TREATED AT

## *THE SURGICAL INSTITUTE,*

NORTHEAST CORNER OF BROAD AND ARCH STREETS, PHILADELPHIA, PA.

BY J. G. ALLEN, M.D.,
Surgeon in Charge.

(Continued from last number )

AFTER a considerable degree of improvement has occurred in the class of cases just described, or where the depressed condition is not brought on by overwork, or not one of true exhaustion, great advantage can be had from the use of Eugene Pau's well-known compound gymnasium (Fig. 3), with which the Institute is provided. No mistake, however, is much more frequently made by physicians than the attempt to require active or gymnastic exercises from exhausted patients, before they have been sufficiently rested and restored by other methods and measures of treatment, to be able to endure it. It is the large class of patients that are thus unable for any form of gymnastics, and yet need exercise, that the massage apparatus just described is of so much importance and value in treating. There are

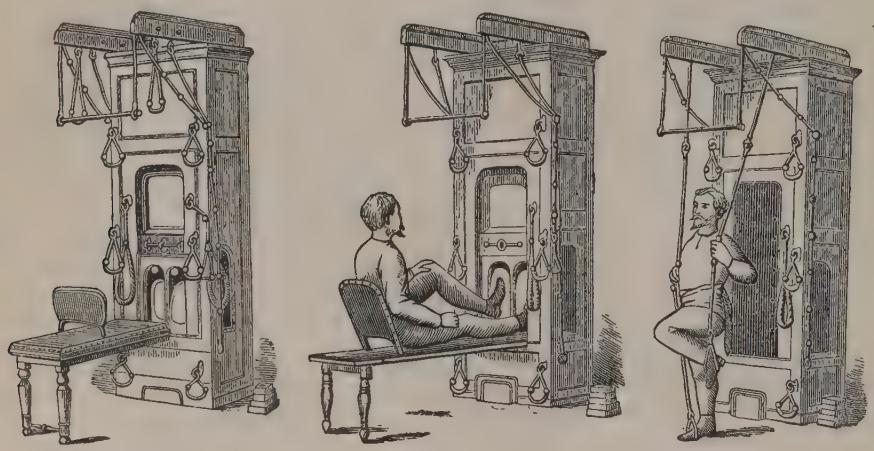

FIG. 3.

also certain forms of paralysis which, like these exhausted cases, are utterly unable for any kind of active exercise, for which there is no possible treatment comparable to active,

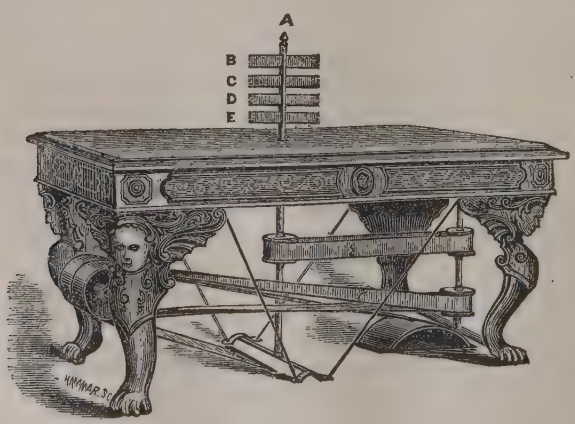


FIG. 4.

thorough, and prolonged massage, such as can be administered by apparatuses Figs. 1 and 2, and when the skin is cold and insensitive, as it generally is in connection without muscular

weakness and paralysis, the flagellating apparatuses, Figs. 4 and 5, are almost indispensable. Fig. 4 consists of a bench or table through and above which a rapidly revolving shaft *A*, projects; to this shaft are attached several soft leather straps *B*, *C*, *D*, *E*. As the shaft revolves these become gentle but efficient flagellators, whose operation stimulates the capillary circulation of the skin in a most satisfactory manner. The patient can be seated upon the bench so as to receive the flagellation on any and every part of the torso.

Fig. 5 operates similarly to Fig. 4. The patient is placed upon the seat *A*, which moves to and fro as in Fig. 2; the lower limb is placed between the two upright revolving shafts *C*, *D*, which being set in motion the projecting leather straps *E*, *E*, flagellate and stimulate the limb very effectually. By placing the patient on a seat at the end of the machine, the arm can be operated upon in the same manner. Thus by the combined operation of these various machines, the whole, or any desired portion of the body can be most thoroughly and completely kneaded and manipulated, and these massage operations are very much more

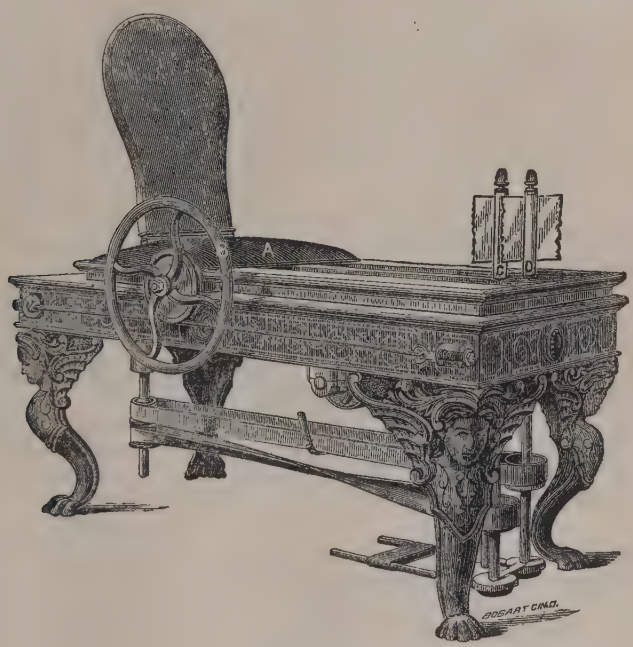


FIG. 5.

thorough and complete, than anything possible by hand manipulation. In fact, a very satisfactory substitute for real, active exercise can be obtained thereby.*

Many cases of paralysis will respond to treatment by the means just described. At the same time persevering efforts should be made to redirect the will power to the paralyzed and helpless muscles.

Professor Gross, speaking of "wasting palsy," says,† "The treatment, whatever it may be, should be combined with gentle exercise of the affected parts, to recall them, as it were, to a sense of their duty. They should, in fact, be re-educated by a system of careful training; but to do this to advantage, the efforts must be steadily and perseveringly continued for many months, if not for several years. Conducted in this way great confidence may be entertained of ultimate benefit." Unfortunately, physicians are too apt to relegate all cases of paralysis to the domain of the incurable. It is, however, in cases of infantile paralysis, that the most hope of benefit may be entertained, notwithstanding the fact that nearly all authors regard it as so intractable and hopeless.

[To be continued.]

* The ordinary clothing is not removed for treatment by any of these massage or flagellating machines.

† Third edition, vol. i.,p. 626.

## BALTIMORE NOTES.

EDITED BY

HERBERT HARLAN, A.B., M.D., Cor. Sec'y Alumni Association of Univ. of Md., Surgeon to Presbyterian Eye and Ear Hospital, and Ass't Dem. of Anatomy, Univ. of Md.; and HIRAM WOODS, A.M., M.D., Surgeon to Presbyterian Eye and Ear Hospital, Chief of Clinic on Dermatology, Univ. of Md., etc.

Dr. E. P. Turner (Class 1885) has returned to Baltimore from his home at Richmond, Va. He proposes spending a year in the University Hospital.

Dr. Schwalbe, who took the gold medal at the University of Maryland this year, has opened an office on West Fayette Street.

Drs. C. Pennington (Class 1882) and C. A. Cooke (Class 1883) have been added to the surgical staff of the Presbyterian Eye and Ear Hospital.

Dr. William T. Councilman is Visiting Physician of the Insane Hospital at Bay View Asylum.

Professor J. E. Atkinson lectured on April 14th in the hall of the Young Men's Christian Association building. His subject was "Baths and Bathing." Professor Atkinson's lecture was one of a course on medical subjects which has been given during the winter.

Professor Tiffany intends reading a paper on "Nephrolithotomy" at the meeting of the American Surgical Association, in Washington. He expects to exhibit a patient upon whom he successfully performed the operation two months ago.

At a recent meeting of the Medical and Chirurgical Faculty of Maryland, it was resolved to recommend to the Faculty at their annual meeting, on April 28th, to postpone their session till May 12th, so as not to conflict with the meeting of the American Medical Association at New Orleans. The following gentlemen have been appointed delegates to New Orleans from the Baltimore Academy of Medicine: Drs. Richard McSherry, J. E. Michael, Herbert Harlan, J. E. Atkinson, W. C. VanBibber, and J. J. Chisolm.

Dr. Joshua Wilson died at his home in Harford County early in April. He graduated at the University of Maryland in 1818, and was, we believe, her oldest surviving alumnus.

Drs. B. B. Watkins and W. Page McIntosh have passed the examinations of the Medical Board for the Marine Hospital service. Both of these gentlemen are graduates of the College of Physicians and Surgeons. Dr. McIntosh has been one of the Resident Physicians at Bay View Asylum during the past year.

## OUR ADVERTISERS.

Dr. Oliver Wendell Holmes, in acknowledging the receipt of an invoice of Hungarian wine (Tokayer Ausbruch) from Mr. L. Reich, of 63 East Eleventh Street, New York City, took occasion to extol its merits in the following beautiful lines:

"The precious juice has reached me in perfect order, and as the first drops of it run through my veins they inspire me with warmth which takes the form of gratitude."

THE FEEDING OF INFANTS.—This subject was discussed at the one hundred and twelfth annual meeting of the Medical Society of the State of New Jersey, at Spring Lake, May 28th and 29th, 1878. "Answers to this question differed with the residence of the physician—the country and city manifesting each its peculiar needs. The mother's milk is generally conceded to be the best for the infant, but even when this is abundant, it may be disadvantageous for the individual living on it, and a substitute be necessary. Country practitioners recommend cows' milk as the best substitute, while many in cities and towns speak highly of condensed milk. Of the preparations so various and so highly commended by those who put them on the market, the Imperial Granum seems to hold the first place in the estimation of medical observers. All agree in condemning the use of nursing-tubes as unclean, even with the best of care."—*N. Y. Medical Record.*

THE SMITH AND SHAW ELECTRIC COMPANY, of 168 West Thirty-fourth Street, New York City, announce in the advertising columns of this journal the production of a most unique "Pocket Battery," which promises to become very popular with the profession.

It is compactly made, finished in fine style, produces a current of sufficient range to meet all ordinary wants, and is, withal, sold at a very low price; thus giving every physician an opportunity to procure a reliable and convenient battery at a nominal cost.

ALBERT E. MENKE, D. Sc.; F.C.S., F.I.C., Professor of Organic Chemistry in the Kentucky State College, late Assistant Chemist, Department of Agriculture, Washington, D.C., says, "I hereby state that I have made an analysis of Duffy's Malt Whiskey, and found it to be absolutely pure, not containing a trace of fusel oil, or any other deleterious ingredient. It is peculiarly fitted for medicinal or any other purposes where a carefully prepared and unadulterated whiskey is desired."

DR. GEORGE H. H. WILLIAMS, of Philadelphia, Pa., says, "From a somewhat extended experience in prescribing Papine, I am led to regard it as the best and safest of all opiates."

# SUPPLEMENT.

## *THE PHYSICIAN TO THE PUBLIC.*

VALEDICTORY ADDRESS TO THE GRADUATING CLASS OF JEFFERSON MEDICAL COLLEGE, AT THE SIXTIETH ANNUAL COMMENCEMENT, DELIVERED IN THE ACADEMY OF MUSIC, APRIL 2, 1885.

BY WILLIAM H. PANCOAST, A.M., M.D.,
Professor of General, Descriptive, and Surgical Anatomy; Corresponding Member of the Societe Clinique de Paris, etc.

GENTLEMEN: You have just received from the Honorable Board of Trustees, by the hand of its honored President, the "Summi Honores" of Jefferson Medical College. The goal to which you have so long looked, and striven so hard to reach, has been attained. The great exertions and the self-sacrifices that you have made, have gained at last their reward. After the long years of study and earnest preparation, you have passed successfully through the severe and impartial examination of the Faculty of the College. The Faculty, having thus been well satisfied with your merits and your attainments, have recommended you to the approbation of our Honorable Board of Trustees. By the authority invested in the Trustees, by the great State of Pennsylvania, under a charter of full university powers, they have this day, through their President, conferred upon you the highest honors that you can now receive from our institution. You this day receive the broad diploma of Jefferson Medical College, stamped with the great seal of authority. You are now enrolled as a regular physician in the ranks of our honored medical profession. Two weeks ago I told you that I would have the pleasure of meeting the graduates upon this interesting and important occasion. Now, on behalf of, and in the name of my colleagues of the Faculty, your honored professors; in the presence of this great assembly; in that of your friends and the friends of our school, I most heartily and sincerely congratulate you, on your attainment of this great distinction. I most sincerely hope that this day will be a veritable "commencement" of a long life of usefulness and distinction. May every prosperity attend you. May the world in which you will live, learn to recognize you as its benefactor and its friend.

Gentlemen, you are well aware, that during your long course of study every inducement has been given you to perfect yourselves in every way. That continually, you have been taught by your different professors, that as medical men you must always be gentlemen; that the Hippocratic oath binds you now, as much as it did your predecessors; that the principle which underlies it, and our Code of Ethics, is the same that should govern every one.

It is the basis now of all gentlemanly action, as well as the foundation of our religion, to do to others as you would have others do to you. You have been thoroughly trained in this great principle, both by precept and example. I know this is fully impressed upon you, at this moment of the commencement of your new career. I therefore take this occasion, and in the presence of this vast audience, which so well represents the wide world without, to appeal to them as to the whole world, to appreciate you as they should.

For three years, and many of you for four years, in the office of your preceptor and then in our College, have devoted yourselves most earnestly to the study of your profession. The public, I am sure, do not thoroughly understand what that means. It means, as you and we well know, earnest and severe work. Only the well-informed of the great world know how severe the work is that you have just passed through. The public should know, that in our school, the spring and autumn courses of lectures unite the winter sessions. With the exception of the heated term of July and August, lectures are continually given. Practically there are two courses, a winter and a summer course each year. By dividing our courses of lectures and examinations into two parts: a middle and a

final one, the junior and the senior, or the fundamental and the practising branches, we arrange for a three years' course, which we advise and recommend, and which so many of you follow.

I earnestly believe, that we should continue to improve medical teaching in every way. I also think that the true American advance in medical teaching, is to examine students when they are well prepared; to give them every advantage of theoretical and practical teaching; work in the laboratories, and study at the bed-side in the hospitals. Then, whether it has taken two, three, or five years to master their studies; if well mastered, if they are proficient students, give them the credit for it. There is a great variety of talent. Some can master the principles of medicine in much less time, as you know, than others. We would not chain a Pegasus to an ordinary horse. We should not, in my opinion, imitate a Procrustean bed, to make every one fit it, by stretching them out or cutting them shorter.

So great, however, is the field of medical study, that it must always take some years for even the brightest intellect to master. You know, gentlemen, how long it has taken you, to prepare for the thorough examination that you have just passed. You have found it impartial, and severe enough. I know how you have dreaded the examinations, and how anxiously you have prepared for them. I feel assured that many old practitioners, accomplished by years of experience, with a reputation for great excellence in their different specialties, could not pass creditably the examination that you have just undergone, without preparing themselves anew. Doctors, recent graduates of other schools, are sometimes unable to meet the requirements of the standard of our school, and cannot gain our diploma. To obtain the necessary knowledge, our students work most laboriously. In the winter, from nine in the morning until ten o'clock at night, ten hours out of the twelve, in close, hard study. Each hour filled with teaching to be remembered, or practical work in the laboratory to be mastered; the remainder of the time should be left for repose and meals. Two or three hours of that time, however, must be spent in reading up with the lectures and arranging notes. When the country grows richer, the student can afford to take more time, and work more easily. I believe that during the winter course the industrious student in our College, must spend about thirteen or fourteen hours in work. I believe that I am stating a fact, now well known, that during the lecture season, no students, as a class, in the world, work so assiduously as the American student.

The public should be informed, at how great an expense, not merely of money and time, but also of health, the medical student gains the knowledge, that is to make him its useful servant. During an observation of many years, from my student days on the benches, until now, I have had a long observation of medical students. I state, and my observation will be borne out by my colleagues, that the strain upon the vital forces of the student is very severe. He is not usually exposed directly to contagion; and in the dissecting-room, every precaution is taken to avoid poisoned wounds. But the steady, continuous strain upon the mind of the earnest student, with the confinement in lecture-rooms and laboratories; the change from home, and want of sufficient open-air life, make a marked deterioration in his vitality.

Only those possessing sufficient health should really study to become physicians. The idea that some among the public hold, that the young man not strong enough for severe work, is a proper person to devote to medicine, is a great mistake. We have seen good and promising men of bright intellects, with every qualification for distinguished success in our profession, save that of health—a good constitution—break down utterly; be compelled to cease their studies, and advised by us to give up the study, as too severe a strain upon their health. But still more sad, painful, and melancholy to the Faculty and class alike, is it, when one among them sinks utterly, and dies in his harness of faithful students' work. What a pall is thrown over the whole college. How closely and sadly are we then all drawn together, in the common bond of brotherhood and sympathy. Sorrow for our lost comrade and pupil, sympathy for his loved ones, grieving over the vacant chair at their fireside. Thankful are we, your professors, that the Omnipotent has spared this class.

Our school is essentially an American one. Developed for, and adapted to the genius of Americans, traced back for its origin through the University of Pennsylvania, the mother

school of all in this country, to the great school of Edinborough in its palmiest days, when Rush, Physick, and Shippen were among its matriculants.

The founder of the Medical Department of Jefferson Medical College, Dr. George McClellan, impressed the genius of his American development upon our school. Instead of imitating merely the British system, he obtained a full university charter, with all its rights and privileges. He then instituted for the first time in this country, the uniting together of practical and didactic teaching, under one roof —that of Jefferson Medical College. This plan of teaching has been imitated, by nearly all the great schools of the country. The regular and thorough course of lectures, the didactic; and then the principles applied, and their value shown by the same professor, in the benevolent service to the poor, in the public clinics. This has been of twofold advantage. By the talent of the Faculties, which then succeeded to the founder, the reputation of the school was made. Thousands of students, have availed themselves of these opportunities.

At this moment, I believe, we have the greatest number of living alumni in the country. Do the public appreciate, how great an advantage it has been to this city, that so many have gone out through the gates of our school to proclaim its merits; the many advantages that the city commercially possesses; also how much money they brought to spend in their support among its industries? The student's least expense, is that of his medical fees. The other advantage also is for the benefit of the public. The reputation of the successful clinics became so great, that vast numbers of the suffering, not only of this city and State, but of distant States, flocked to the amphitheatre for relief. So great is the reputation of the clinics at the college on Tenth Street, that the Honorable Board of Trustees, aided by the friends of the institution and also by the State, raised funds to build a hospital—a hospital worthy of the reputation of the clinics, and adjacent to the school on Sansom Street.

The wonderful activity of our School Hospital, you, gentlemen, can bear witness to. Compactly built, five stories high, in the centre of the city. Here, the streets being well paved and drained, there is no malaria or intermittent fever. The private rooms are at the top of the building, away from the noise of the streets and the Hospital, with every convenience. A Clinical Hotel at the top of the house, constantly filled, as you well know, so that rooms must be spoken for in advance. A magnificent Amphitheatre for the clinics, one of the very largest, if not the largest, in the country.

Here, you can testify to the world is a wonderful amount of good done, and hard work also, by the Faculty and the Hospital Physicians and Surgeons; that all the year round, you have the benefit of the services of the Hospital Staff, or that of the Professors. That in the Medical Clinics, you have the advantage of studying from the standpoint of the Chair of Practice and that of Therapeutics. In the Surgical Clinics, from the Chair of Practical Surgery, the Chair of Principles, and also from that of Anatomy. In these clinics, I have had the opportunity of impressing upon your minds, the importance of a thorough knowledge of Anatomy. Not as a dead science, but the live anatomy that I have taught you. A medical and surgical anatomy that you must know, as it comes before you, in the person of every patient.

A Surgical Clinic is really one of the most dramatic scenes of our civilization. You, gentlemen, from the commodious seats placed around and above, have looked on day after day; watching, observing, and learning; often severe as well as just critics.

No critic is more critical than a medical student. He expects to see every operation well done, every case well diagnosed and well treated. In after years, when the responsibility of the same work falls to his lot, the weight is felt, and the difficulties are appreciated. He then remembers how easy it seemed to him, when he looked upon a skilled expert doing the same work, that he now finds so difficult. There has been a prejudice in the popular mind against medical students, as a class, due to the youthful gayety, even folly of some of you and our predecessor medical students. We, who know medical students well, can freely state to the public, that there are no set of men in the world who can be more easily controlled. An appeal to their better nature, always brings forth the proper response. The noble, high-toned man, shines up through the gayety of youth. How many mature, even elderly men and experienced practitioners of medicine, are also among the class. No humbug or sham work will it listen or attend to. While the medical student may dread the severe

examination, while he may be worried at the immense field of knowledge and study that the professors may show him, yet he respects him the more for his very earnestness, thoroughness, and knowledge. He wishes his professors to pour out the whole flood of knowledge before him, even if his students' bark be tossed and worried by the stream. He is glad to hear and see all, and that of the best, even if his mental digestion be disturbed and very imperfect. They watch, to see if the promises of the great school, will be thoroughly fulfilled. They know and understand their professors, as well as we do them. Day after day they see us before them, and they soon learn to appreciate us at our full value.

He who thinks that a class of medical students is composed of fools, makes a great mistake, and will be caught in his folly. The bright, observing intellects give tone to the rest, and even elevate the mental capacity of a class. The less bright will comprehend difficult truths the better, for the association while sitting in the class, than if alone. From out the ranks of the medical students, come the great benefactors of the human race. To their intelligence we, the Faculty, appeal, as competent witnesses of the thorough work done in our school, in the lecture-rooms, clinics, and laboratories; of our steady and constant efforts in the way of advanced and perfect medical teaching. They know, that our diploma requires, every year, additional earnest efforts to obtain. The alumni of our school know, that it increases in honor and reputation year by year. How great an advance, since the beginning of the modest school founded by McClellan, more than sixty years ago. Now we have a commodious college building, on Tenth Street. Within the last few years, it has been thoroughly refitted, with laboratories, attached to each chair, and actively employed. Also the admirable hospital adjacent, on Sansom Street, whose usefulness and activity outrun its means. The Honorable Board of Trustees, give their valuable services for the control and management of College and Hospital, without fee or pecuniary reward. The Faculty contribute from the rental of the chairs in which they labor, besides, what all may dispense in private charity. We need more money, for the greater development of our increasing usefulness, and even for what we are now doing.

You, graduates, and you, the great public, can do no better deed, than to aid it and the Honorable Board of Trustees by giving of your own gains, and to encourage the benevolent to add to the means of the Hospital and the school.

You gentlemen know, that the standard of our school is among the very highest in this country; that no school stands higher than ours. It is one of the six schools in the United States, recognized by the Royal College of Surgeons of England. The public should know, that our diploma is a passport, in all the medical schools and hospitals in Europe. Gentlemen now sitting on this platform, can bear testimony to the fact from their personal experience, as well as myself.

Sir Benjamin Brodie, in 1856, when I was walking the Hospitals in London, wished me to use it as a basis, for obtaining the diploma of the Royal College of Surgeons by examination.

The next year, my good friend, the famous Civiale, a noble gentlemen and ornament of our profession, requested me to do the same in Paris, wishing that I should settle there as his assistant. I found my diploma, however, sufficient for every opportunity of study, opening up all the medical avenues. I preferred living in our grand country, and in this good city of Philadelphia, under the protection of the diploma, giving every authority and right—the diploma of Jefferson Medical College. In Paris, at that time, there arose some trouble among the medical students; not among the Americans, I am proud to say. An order was then issued, obliging every one desiring to attend the hospitals, to prove that he was studying medicine or surgery, and to obtain a permit from the medical authorities. I had merely to prove, by a note from our national representative, that I was a graduate of Jefferson Medical College. I then at once received from the Bureau, of the General Administration of the Hospitals, the permit required. Our diploma is recognized, all the world over, as that of a great and thorough American school. So grand is the feeling of Brotherhood in our Profession, that one need only have the proofs that he belongs to this regular profession, to be taken by the right hand of fellowship; to be recognized and assisted, if need be, in any quarter of the civilized world.

If Europe were destroyed to-day, we could develop successfully without her. We are independent of her, and could advance in our profession as well as in everything else.

The graduates of our school, and the school itself, belong to the regular profession. The public should know that our regular profession has ennobled itself with works of learned science and benevolent actions.

It has been of incalculable value to the world, and has placed it under everlasting obligations. It has preserved and perpetuated a pure science and art of medicine, founded upon careful observations; great clinical study with thoughtful induction, traced back into the mists of the departed centuries.

The regular profession does not labor for mere selfish personal considerations. It cultivates all the means of health for its preservation, the study of hygiene, and the methods and manners of restoring from injury and disease to health. It engages in careful and earnest investigations, of the cause and nature of all epidemics; some of which every now and then, as the dreaded cholera, sweep over lands and peoples, carrying horror and destruction into homes and hearts, and devastation to the loveliest parts of the world. Our profession is now standing sentinel, and warning the community of the impending danger of cholera for the coming year. Suggesting the necessity of cleanliness and purity in cities, villages, and homes; pure water, fresh air, and clean streets. "Rebreathed air is poison; impure water at times spreads disease as fire explodes gunpowder."

"Filth, idleness and gluttony are the friends of death." We are giving now directions with regard to diet and food, advising medical inspection, compulsory notice of infection — better protections, than the best quarantine system, which has always proved more or less imperfect. If it could be made perfect, it would be a good guard. When the scourge comes, there will be members of our profession aiding, protecting and relieving the public; and sacrificing their lives for the benefit of the public. While we, as earnest and scientific physicians, stand guard at every avenue, where disease may enter, to do its dreadful and often fatal work, we are expected to be refined, cultivated, and high-toned gentlemen. Our mission is one of humanity. It awakens the warmest sympathy, and calls into active exercise, the most tender emotions of the soul. The distinguished Descartes once predicted, that all the great movements of the world of thought, in physics, in morals, and even in government, would at some future day, be evolved out of the medical sciences; princes deem it well worthy, of their personal cultivation and devotion; a Bavarian prince is now, as I have read, a skilled opthalmologist.

In 1856, Sir James Y. Simpson, told my father and myself, that, one day on returning to his home in Edinborough after his daily rounds, a lady was announced among his patients. On taking a seat, she said: "What is there new, Sir James, in your science and practice? I have traveled up from London, where I am visiting the Queen, to have a chat with you about medical science." She then announced herself as a Russian Archduchess, sister of the Czar of Russia. The Romanoff family have always been much interested in the science of medicine.

During our Centennial Exhibition, a medical gentleman, with the rank of General, attached to the Russian Commission, told me, that one of the special commands he had received, was to see my father operate in private or at the Clinic of the College.

Indeed, our profession is engaged in ennobling studies. It is closely associated with the interests of every human life. We should indeed have influence in the world. Our work should be most warmly appreciated. The best of it is known only to ourselves. But the grand interests of our profession, are not thoroughly recognized — our scholarship is not always appreciated.

There are some persons who are scoffers and skeptics, and those who have a want of reverence for everything sacred; so it is not strange that there are also those, who vehemently denounce medicine and its earnest cultivators. But when their bodies are racked with pain, or feeling the pressure of infirmities, then seek they for relief; then turn they toward what they have reviled in health, and clamor for assistance and aids to health, or to save from the yawning tomb. The life of the scoffer cannot always be saved, but his suffering can be mitigated.

Our art often does wonders — almost seeming miracles — in spite of its acknowledged want of perfection. What is perfect in this transitory life? Yet, year after year, century after century, what wonderful progress it has made, and how developed and improved is our science, in this nineteenth century. Not perfected yet, hence there is work for you, gentlemen, for us and for all interested in saving hu-

man life, in allaying suffering. Time is fleeting, but art is long; hence, you and we, whose lives are but links united in a chain, to continue the unbroken existence of the profession of medicine, have our career of usefulness.

There is something for you, and all of us, professional brethren, to do; and if each, adding but his mite, does that, the chain is kept bright and strong. In spite of all cavil, the lofty position of our profession is recognized, not only by the civilized, but also by barbarous nations, From the far East to the wonderfully developed West, which now shakes hands with the Orient across the broad Pacific.

We, now, of the Occident, are giving back with increased accumulation, the knowledge which we formerly received from the Orient. Knowledge has followed the Star of Empire. Southey says of us:—

"All men hold in honor
The skilful leech. From land to land he goes,
Safe in his knowledge; the sword of war
Spares him; kings welcome him with costly gifts;
And he who late had from the couch of pain
Lifted a languid look to him for aid,
Beholds him with glad eyes, and blesses him,
In his first thankful prayer."

The public does not thoroughly comprehend our profession, or the use of our Code of Ethics. It requires some education upon that point. Some call us, ignorantly or carelessly, allopaths, which we are not. Do not allow yourselves, gentlemen, to be ever so called. You and we are regular physicians. You have just received the broad Diploma of our School, stamped by its great Seal, under the grant of its Charter of full University powers, from the great State of Pennsylvania. Our School is a University establishment; this the public do not generally know. Our Medical Department we here today represent.

The Academical, fortunately for our Department of Medicine, is on the other side of the Alleghenies. The Jefferson College of Cannonsburg, now associated with the Washington College, fortunately separated; and I say it with all respect to our other active and distinguished Department; as the honorable Board of Trustees in this city, is not embarrassed in the management of the affairs of the Medical, by the sometimes conflicting ones of the Academic. You gentlemen are now our confrères, Doctors of Medicine. That is what the M.D., Medicinae Doctor, on your door-plate or window, will mean—not allopaths, nor paths of any sort. Who has ever seen the sign, "Allopathic Physician?" You now are enrolled with us, Doctors of Medicine, Philosophers in Medicine, constant students and thinkers of our science and art; earnest workers in developing and advancing them, so that they may benefit all mankind. This entitles you and us, to use every and any remedy, that will benefit the suffering and heal the sick or injured. Whatever is in the air above and around us, in the earth beneath, or in the waters about us, we can use if it can serve suffering humanity—if we can do so wisely, and justify such use at the Bar of our Profession; to the satisfaction of its honest and thinking members.

Some of the public charge us with being narrow and too conservative, that is not so; the profession of medicine has never refused to accept any suggestion or assistance, no matter from what source. Ofttimes slowly, but with an honest and wise conservatism. Wishing not to be rash, or to encourage experiments, dangerous to those entrusted to its care. If there is truth and good in the novelty, it is sure to win its way and be ultimately accepted by the regular practice. A prophet may have no honor in his own country. An improvement or invention may be opposed at home, from various causes, some of them, perhaps, interested. It will, however, be appreciated by the candid and unprejudiced abroad, and win its way.

Water treatment, which may be abused by the hydropathist; vapor bath, which was used as a quackery by the steam doctor, or steamopath, whom I have seen in my boyhood, riding his circuit in the country with a steam-box fastened to the back of his sulky. Capsicum and myrrh, the famous No. 6, of the Thomsonian, the movement cure, now the massage, electricity, the panacea of the electropath. The minute doses of the homœopath, which improved pharmacy has given to them and to us in the alkaloids and strong extracts, all these we use, and are justified in using, with judgment, and for the proper case; and we also know that by dilution things are not made stronger. From no source or direction do we refuse knowledge, that will advance science. Professor Oliver Wendell Holmes says, "From a monk we learned how to use antimony, from a Jesuit Father how to cure the ague, from a friar how to cut for stone, from a soldier how

to treat gout, from a sailor how to keep off scurvy, from a postmaster how to sound the Eustachian tube, from a dairy maid how to prevent small-pox, and from an old market woman how to catch the itch insect; from the Japanese heathen the acupuncture and the moxa, and from the American savage the use of lobelia." The earliest accumulation of medical facts—the first medical books—were obtained from the public; they were the remedies and directions, collected and preserved in the ancient heathen temples.

In the earliest days of classic Greece the sick were brought from their homes, and placed on litters in the thronged marts of commerce; the passing, busy merchants, or the traveler of leisure, were begged to tell of any remedy that they may perchance have learned or heard of, that would benefit the case presented, or anything that would cure. If this remedy proved successful, its formula or name was preserved religiously under the care of the priests, with others obtained in like manner. Hippocrates, the sage of Cos, our medical father, born 460 B.C., is said to have studied these carefully, to his and our lasting advantage. I would tell the public that the science of medicine, has most willingly received every contribution; it is older, as I have said, than profane history. It has advanced steadily from a small beginning out of the dark arcades of the centuries.

It has often been hindered by superstition and ignorance. Under the control of this and then of that school of philosophy, sometimes advantageously, sometimes to its detriment. Protected by the priests of heathen times and in the middle ages.

Then, again, by them opposed, embarrassed, and made a mystery. Dragged down by superstition, and struggling with misconception, until now it illuminates the world—the study of the human frame, living and dead.

This knowledge, set forth with precise accuracy and followed up to a logical and practical sequence, with interpreters of nature such as Hippocrates, Sydenham, Harvey, Hunter, Bechat, and many others. We are the legitimate heirs of centuries of knowledge. The public should appreciate the labor, the earnest, studious work that our profession has undergone; the danger to the lives even of those who have advanced its knowledge to this present day. Labors and dangers that you, graduates, have already undergone.

Roisseau says, speaking of our profession, "There is no condition which requires more study than theirs." While it supports the one who exercises it, at the same time his scientific labors are connected with the best interests of humanity. No man is more useful, nor can any merit be more brilliant, nor should any be appreciated, above the good and great physician. He not only fulfils his duty in ordinary times, but when pestilence sweeps over the land, and in the roar and crash of battle. Who is greater practically than a skilful and learned physician—one calm, careful, yet bold, with an intellect bright and clear, a heart full of kindness, ministering to suffering in all gentleness and mercy—that compassionate heart and gentleness of manner, which Shakespeare calls the milk of human kindness. Unfeeling roughness in our profession, I am proud to say, is a great exception. Cicero, the greatest ornament of the Forum and the literature of Rome, the foremost orator and writer of Rome even in its most brilliant epoch said, two thousand years ago, "That men in no way approach nearer the gods than in giving health to their fellow men." "Homines ad deos, nulla re proprius accedunt quam salutem hominibus dando." The prince of physicians says, "A philosophical physician is in manner a god." ιητρος γαρ φιλοσοφος ισωθεος.

Dr. Johnson states, in his dignified way, "That every man has found in physicians great liberality and dignity of sentiment, very prompt effusion of beneficence, and willingness to exert a lucrative art when there is no hope of lucre." Voltaire, like Cicero, exclaims, "That the man who is occupied, in restoring health to his fellows from pure benevolence, is far above all the grandees of the earth, he belongs to the divinity." How much service we render to the public without compensation. One-half of nearly every physician's practice, no matter how distinguished, is for charity. Witness the arduous work in which he sometimes sacrifices his own life, in the clinics and hospitals. Serving in hospitals without pay, and often without any just appreciation.

You will be asked, gentlemen, by the laity, by the great public, your opinion about vivisection, and the value of it as regards any benefits that may accrue from it, to the human race. We, as a profession, are conservators of human life, and all our instincts from the earliest days of student life are cultivated, to prevent and relieve

suffering. As a class, none other is more fond of the brute creation. How often have I seen medical men in the cities and the country, in this and foreign lands, proud and fond of their dogs, their horses and their cattle. You and we have studied together, human anatomy and physiology thoroughly; we have investigated, in connection with them, comparative anatomy, so often furnishing valuable comparisons and illustrations.

We know that the machinery of all animals is similar. Even if not believers in evolution, we know that there is a wonderful similarity and grading of the anatomy from the lowest to the highest, or from the highest to the lowest. We know, also, that the vital spark, which in man we call the vis anima, the soul, is very similar in the highest and lowest, through all the chain of the animal creation. It sparkles in the flashing eye of the war-horse and is recognized in his shrill neigh, vying with the trumpet, or in the affectionate recognition, as the steed turns in his stall to his master, ready for the harness or the saddle.

In the dog, man's faithful companion, how human, often, is his liquid eye of affection; how responsive the vital spark of his machinery to every action, every gesture, often even the emotion of his master. He thinks and seems to reason. His instinct sometimes even excels reason. So full of love is his being, that he will lay down his life for those to whom he is devoted.

As nothing is lost in the chemistry of organic and inorganic structure, when their bodies dissolve and disappear to assume new forms, the vital spark must be economized also. Sympathizing with the brute creation, the majority of our profession, I believe, are strong friends of the Society for the Prevention of Cruelty to Animals. All civilized communities have their laws, dealing with the subject of cruelty to animals. Great good have these done. Brutal men, more brutal than the brutes, have been checked and taught a consideration for suffering flesh.

Yet many benevolent and well meaning people and some sensationalists, have endeavored to create the impression that vivisectors delight in giving pain to dumb animals. This may be answered by stating the fact, that in vivisection the operator requires all his attention to be devoted to the investigation, and it is to his interest that the animal should be tranquil. He therefore generally employs some anæsthetic—ether or chloroform, or the hypodermatic injection of morphia or laudanum, whatever may be best suited.

I remember, when studying in Vienna in 1856, being strongly impressed with the care which the famous Brücke used, in saving animals from pain while he was experimenting upon them. The cries and struggles of the animal would often interfere with the method and success of the investigation.

Animals prey upon animals, from man down. From this standpoint the world seems a bloody one and full of carnage. Yet it is so ordered. If animals did not prey upon each other, and if man did not kill them, the world would be overrun with animals and vermin, and there would be no place for man. Animals take the lives of each other, and also of vegetables. It is right for us to kill animals that we may live. The world and all upon it was made for man. It is certainly right for those experienced men, who are devoting themselves to the study and working of the animal economy, and of the effects of drugs upon the structures, to use judiciously and mercifully the lives of the lower animals. To save the highest—man's—our lives. To study on the animated flesh of the brute the action of therapeutic agents, to know their power and use, to see and learn how and in what way, they may benefit man. I, for one, would not have animals tortured nor vivisected uselessly; but to make experiments on animals, in a merciful way, is much more benevolent than to rashly try them on human beings. My belief is, and I think that it accords with the judgment of the majority of the profession, that vivisection should be permitted, if properly performed, by those who are devoted to the study of physiological science; not ruthlessly, but under the control of mercy and sound judgment.

Ether was introduced into this city as the anæsthetic, while I was a student on the benches that you have just left. I recollect the experiments performed upon animals to test its effect. Notably those of Professor Charles D. Meigs, the distinguished Professor of Obstetrics of that time. He was opposed to the use of ether in his specialty, believing in and quoting the Scripture, "That in travail and in pain the child must be born." He experimented upon animals in the upper lecture-room—the amphitheatre. I recollect the amusement created in the class, by the struggles and resistance made

by a sturdy sheep, who, in bleating and butting, refused to be killed by ether, and trotted out as strong as ever. He thought giving ether was dangerous to life. But now, how wonderful the change. That which was once hesitatingly used, and tried upon animals, is now in every day and constant use. Woman is saved from suffering, and the most painful and dangerous operations are performed without the patient feeling the least pain. I can recollect the practice, when I have seen tartar emetic, tobacco, and bleeding used to reduce and relax a strong patient in certain conditions, where now it is done by a few whiffs of the anæsthetic.

Shakespeare says, "There was never yet a philosopher that could endure the toothache patiently." I have seen patients make themselves rapidly drunk, so as to be able to bear a painful manipulation or operation. Now, the anæsthetic does this decently and well, producing relaxation of the strongest muscles of the whole system. Not only is the feeling of pain removed, but what is really of more importance, the dread and anticipation of the pain.

In regard to scientific investigations we might even go farther. It is considered right to kill a human being as a legal punishment; that the law shall murder him who has been a murderer. Of the correctness of this I have great doubt, as so many innocent persons have been killed from the misconception of circumstantial evidence. The reflection was once made upon our profession that we buried our mistakes.

Dr. Warren (Bey) replied to the legal gentleman, "Yes; but the mistakes of the law are hung upon the gallows." The putting to death of a criminal by law does not seem to prevent murder. The hanging spectacle, was formerly an amusement to the dangerous class. But if killing must be done for the benefit of society, I think that it should be done in a more scientific and less brutal manner. If done scientifically, with some form of anæsthetic, valuable physiological knowledge might be gained.

How great an obligation, is the public under to our profession for its adoption and use of ether. Thoughtless and satirical people sometimes cast gibes at us, and imply that we make our subsistence from the sufferings of people, and rather like to see such suffering. That the surgeon is cold-hearted and cruel, and loves to cut for the sake of cutting, without regard to the suffering he causes. You graduates are witnesses that this is false. In our great clinics, at the Jefferson Medical College Hospital, how careful we are to save suffering; how constantly we use ether, and often insist upon its use, to a patient whose strong nerves can bear pain or who dreads becoming unconscious. Our efforts are always directed to save suffering. How eagerly was the use of ether, as an anæsthetic, adopted by our profession.

Whether Long, Wells, Morton, or Jackson was the first to introduce ether as the anæsthetic to our profession and to the world, it is to the great honor of our country that it was first done within her borders. A priceless boon, a most beneficent gift from the Almighty. The greatest discovery I think that was ever made in the world; far exceeding in value the discovery of the steam engine, or the use of electricity. Life and death relieved of agony; pain and suffering almost banished from the world; the old primeval curse greatly removed. A grand step toward the millenium. The public appreciates its value now well; but not so much as we, of our profession. How much less does the physician and the surgeon dread encountering suffering; how much easier in his soul is the surgeon now that he knows he will not give pain. How much more calmly and carefully can he now operate, to cure a deformity or to save valuable lives. How many more difficult and conservative operations to limb and life are now invented and undertaken, when the question of pain does not require consideration.

Dr. Crawford W. Long, of Athens, Ga., who studied medicine in Philadelphia, and graduated in 1839, at the University of Pennsylvania, performed the first surgical operation under ether.* He did this with intention and forethought, upon a Mr. James Venable, of Jefferson, Ga. The first public demonstration of the value of ether as the anæsthetic, was made by Drs. Warren, Hayward and Bigelow, in the Massachusetts General Hospital, October, 1846.

The discovery then first burst upon the world, and its greatness was soon appreciated. Ether was recommended by Dr. Morton, the dentist, and given by him, though at the suggestion of Dr. Jackson, the chemist.

Horace Wells, Doctor of Dentistry, confined his attention to the anæsthesia produced by

* The Discovery of Anæsthesia, by J. Marion Sims, M.D., etc.

nitrous oxide gas. It is most happily now employed extensively by our sister profession, in its benevolent and skilful operations. Jackson is now in an insane asylum; Morton died from congestion of the brain, produced by worry; Horace Wells committed suicide in despair in New York City. Dr. Crawford W. Long, I believe, is still alive, but greatly reduced in means from losses occurring during the civil war.*

On the famous Boston Common, I have seen a monument to Anæsthesia. No name is there inscribed to honor the discoverer or discoverers of this use of ether. I would respectfully suggest that the names in the order that I have given them, should be there inscribed. Farther, to prove that republics are not ungrateful, do you, the public, do your duty, through Congress, and make a suitable grant of money to the families of these great benefactors of the whole human race. Sir James Y. Simpson, for the subsequent discovery of chloroform, as an anæsthetic, was promptly rewarded by the appreciating British government. Why should our republic be ungrateful?

Anæsthesia is like the

"Sleep, that knits up the raveled sleave of care,
The death of each day's life, sore labor's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher of life's feast."

Cervantes makes Sancho Panza say, "Blessed is the man who first invented sleep, it covers one all over as with a blanket:" but thrice blessed, I say, the man or men who first demonstrated this use of ether; the place and the country in which it was first used, to produce the sleep of anæsthesia. Thus relieving and preventing the pain and suffering incident to human life. Medicine is older than profane history. There is no reliable historical work describing its first beginning. When Father Adam gave up paradise to follow Mother Eve in their struggle for existence, simple remedies must have been used to control feverish symptoms, or lotions to soothe bruises and cuts, or the spot from which some thorn had been extracted. But in sacred writ is described, the deep sleep that fell upon Adam, when his rib was taken out to make Mother Eve. By this it is understood, that Adam was in an anæsthetic sleep. By this it seems the anæsthesia of the present day was foreshadowed; and some from this exsection of the rib, may claim priority upon the earth, for surgery over medicine. Some have slanderously said, what a great pity, that lovely woman, was made from a crooked rib. Slander indeed, for as Sir Walter sings in Marmion:—

"Ah woman, in our hours of ease,
Uncertain, coy, and hard to please,
And variable as the shade,
By the light quivering aspen made,
When pain and anguish wring the brow,
A ministering angel thou."

The question of cremation is now before the public, and the opinion of our profession is sought in regard to it. You will be expected, gentlemen, to give an opinion upon the question. In our own country and in England or in Germany, it has been practised to some extent, and some prominent people have given it their sanction. A distinguished Emeritus Professor* of our College has indorsed it by his precept and example. The great body of our profession are however opposed to it upon, I think, most reasonable grounds. There is no doubt that if it was the universal practice, death by poisoning might become more frequent. The murderer might more easily escape. The body once cremated, would hide in its ashes every vestige of the cause of death. If suspicion should arise, some time after the demise of an individual murdered, there would be no opportunity of exhuming and making a chemical investigation. I feel assured even, that the practice of making *post-mortems* would be forbidden and become obsolete. This is denied by the supporters of cremation, but history proves the contrary.

In the latter days of Greece and Rome, when this was the practice, the dead were regarded with superstitious feelings. No examination of the body was permitted. So utterly impossible was it to investigate the human body in any way, that Galen was obliged to cross the Mediterranean Sea, to Egypt, to see and examine a human skeleton. Even in that land, the most advanced in science at that time—when Alexandria was adorned by its great school and the famous library, during the reign of the Ptolmeys—the embalmers were obliged to flee from the mob after fulfilling their duties, glad to escape from the shower of missiles with their lives. By this practice of

* J. Marion Sims.

* Emeritus Prof. S. D. Gross, M.D., D.C.L. Oxon. LL.D. Cantab., etc.

embalming some human anatomy was learned, and Alexandria ultimately became the great school of anatomy of that time.

It has been the means of preserving important knowledge. The coverings of the mummies have given occupation to the scholar, and valuable information to our generation.

On the other side of the world from us—in India—the British government has been obliged to forbid by law the practice of the Suttee. Not only from the question of humanity—to save the unfortunate wife from being burned alive with the dead body of her husband—but, I have seen it stated, for the purpose of preventing murder by poisoning. The cremation of the dead having been found so often to be used to hide the murder. During any great pestilence, making its holocaust of victims, and when the ordinary burial might possibly invite its continuance, cremation may be useful, and even necessary; or when the number of the dead are so great, that the living are too few to give the usual sepulture. But, in the course of ordinary events, there are strong scientific grounds of objection. If it became the fashion and the custom, the unclaimed dead would be cremated likewise, and all opportunities for the pursuit of anatomical science would be lost. Without the cultivation of anatomy and physiology our medical science would come to a standstill. It was not until the anatomy of the human body was understood, that any real and valuable advance was made in medicine. To relieve disease, to cure deformities, to cut away malignant growths, to amputate limbs successfully, requires a knowledge of anatomy. The first knowledge necessary for the medical man, and a knowledge that he must retain more or less completely during all his medical career. Other things being equal, the better the anatomist the greater the surgeon will be. The *post-mortem* follows as a necessary scientific sequence. Every one of the public must know, that to be able to examine the causes which produced death, must be of the greatest value in making medical men to know, what they have to combat; the conditions needing treatment, and above all, if the means used have been adapted to the necessity; if they have benefited, or the contrary.

Every regular physician is always anxious for such a test. The public have become educated to appreciate the importance of it. Such examinations are conducted with such delicacy and propriety in our great centres, that they are almost always easily obtained, and in many cases are requested by the friends of the patient. Thus they can learn if there are any hereditary or constitutional conditions existing. Information of great value for the preservation of the descendants; also if everything that could have been done was done. The real and true advance of civilization and intelligence, is to have a *post-mortem* made in every case. A severe test of the practitioner's knowledge and skill. This the regular physician desires and courts, as he is only seeking for knowledge and truth, and conscientiously to do the best, that can be done.

The suggestion made, that interments may endanger the health of our water supply is not valid either. Dust to dust, is the solemn statement, and so it is. Soon the once vital clay, mingles with that of mother Earth. The earth is a great purifier. It has been shown by one of our distinguished alumni, Dr. Adinell Hewson, that it can have useful applications in many surgical conditions.

We all know how soothing an application it is, to the acid poison of the insect's sting. Did our Saviour not make mud and anoint the eyes of the blind, as he performed the miracle of restoring sight. The Schuylkill has never been poisoned or contaminated by Laurel Hill, but from other causes that ought to be checked. The work of the living is often far more poisonous than the results of burial. At Laurel Hill, in the beautiful Wissahickon gorge, an interesting geological region, as any one can observe, the dip of the strata is towards the north. As the rain descends, the water, percolating through the strata, flows north, away from the city. Even intra-mural burial grounds, which apparently are more objectionable, have their advantage. They keep open spaces in the great cities; these, adorned with shrubs and stately trees, are quoting Burke's great phrase, "Lungs for the city."

We have plenty of room yet in our neighborhood, for beautiful burying grounds. When the land becomes crowded with the living, so that there is no place for the sacred dead, then will it be time enough to establish cremation, and not until then. The real advance in funeral obsequies at the present time, I believe to be not in cremation, but in a simple form of burial. In place of heavy and costly caskets,

light wicker ones should be used, they can be made easily strong enough to carry the modestly robed contents. This will make a revolution in regard to expense—a great boon to the poor classes—and will allow the dust to mingle more rapidly with its parent dust.

Gentlemen, I have set forth some of the relations of the public to our profession. When it is sufficiently educated, its good, common sense will appreciate our science at its proper value. It will not then distress us by following vulgar quackeries, which will disappear one after the other, like dead twigs falling from a tree and wafted into space. All of the public are not wise, "Cent imbeciles, ne font Pas un sage," says Voltaire. A hundred imbeciles do not make a wise man. The wise men, however, direct and educate the masses, and develop its good sense. To the good, common sense of the public we now commend you. I trust that it will give every one of you a hearty welcome. The public must have doctors. "Doctors are human; they become worn out in service, and the public must have new ones." There is room for all of you, in our great and growing country. You will be needed, as we send you away from us, as apostles to the North, South, East, and West. Control your hearts with patience, using your time wisely and well. Your time must come, and as it has been said, "There is always room at the top." We welcome talent and genius most cordially into our ranks. But even "a man of moderate ability may be a good physician, and perhaps a safer practitioner than one, we will say, who has five per cent. more brains than his average neighbor, but thinks it is fifty per cent."* Each one of you can add something to our science or practice.

The more you apply yourselves, the more will you appreciate knowledge. Bacon says of philosophy, "When superficially studied it excites doubt, when thoroughly explored it dispels it." So is it with the philosophical study of medicine.

It may be interesting to this audience, and it is appropriate to this occasion, to quote what was said to the young men of many centuries gone by. Good old Prince Phtah-hotep,† son of a king of the fifth dynasty, the next after the pyramid dynasty, wrote a moral treatise of advice to the young people of four thousand years ago. This book, now preserved in Paris, is believed to be the oldest in the world.

He said, forty centuries ago, "The obedient son shall grow old and obtain favor. Thus have I myself become an old man on earth, and have lived one hundred and ten years in favor with the King and approved by my seniors." "If thou art become great, after thou hast been humble, and if thou hast amassed riches after poverty, being because of that the first in thy town. If thou art known for thy wealth, and art become a great lord, let not thy heart become proud, because of thy riches, for it is God who is the author of them. Despise not another, who is as thou wast; be towards him as toward an equal."

Also, "Let thy face be cheerful as long as thou livest; has any one come out of the coffin after having entered it?"

The most celebrated Egyptian book, named the "Book of the Manifestation of Light," or the "Book of the Dead," makes the soul defend itself before Osiris.*

The soul, having wandered to and fro, finally joins its preserved, mummified body, and, standing before Osiris, was judged favorably when it could say in its defense:—

"I have not been idle; I have not been intoxicated; I have not told secrets; I have not told falsehoods; I have not defrauded; I have not slandered; I have not caused tears; I have given food to the hungry, drink to the thirsty, and clothes to the naked."

The rejected soul went back to the earth in the form of the pig, or some unclean animal.

The public looks with some hesitation upon the young doctor. Not, however, with as much as in former years. It knows now that some of the greatest work done in the world has been accomplished by young men. It reads of the great achievements of Alexander, Hannibal, and Bonaparte, while they were still young men. Descartes at twenty-one distinguished himself in mathematics; Vesalius was twenty-four years old when he developed his

* Professor Oliver Wendell Holmes.

† Barnes's General History.

* The most widely worshipped triads of Egypt were Osiris, Isis, and Horus. The god Osiris went about the earth doing good, until he was persecuted and slain by Set, or Typhon, his brother, whose emblem was the pig, the ass, and the hippopotamus. Osiris' wife, Isis, by her prayers assisted in his resurrection, and finally Horus, his son, avenged his wrongs by destroying Typhon. The soul having wandered to and fro from its mummified body during the day-time at will, and at others migrating through the body of the hawk, the heron, the serpent, the crocodile, the crane, and the lotus flower, all symbols of deity finally joined its mummified body and stood before Osiris.

wonderful anatomical work; Bichat died in his thirty-first year; Newton at twenty-three first thought of the principle of gravitation, as he saw an apple fall from a tree. The public now recognize, that young men can be admirably prepared for the practice of our profession, in the great centres of medical science. It is a good thing for a young physician to associate himself as an assistant, with an experienced practitioner of medicine or surgery. He will not only thus gain experience more rapidly, but the public will become sooner acquainted with him and his merits. This waiting time, although vexatious to the ambitious young doctor, is time really of great value to him. Then can he lay the foundation of his future success and distinction. Then should he by studying up his cases thoroughly, perfect the knowledge gained as an undergraduate. Master French and German, the knowledge of which will open up great stores of scientific and literary knowledge, and assist him notably some day in his relations with the public. The poor must be attended to. Their lives are as valuable to them as to the rich. The father and mother may be even more important, for the protection and education of the children, as they are their only protectors. It is to the honor of our profession, that it goes to the service of the poor, as freely as to that of the rich and the high-born. It is your privilege, that of the young physician, to have them for your first patrons. In difficult cases, you can always have the aid of the oldest and most distinguished practitioner. The poor first make your reputation. It is a curious fact, that, as a rule, there is no successful practitioner who has not first made his reputation with the poor. No matter how old a man may be, or how great his reputation for scientific lore, he can not at once step into a large and remunerative practice. He may have consultations, but for active and constant occupation in practice, he must commence at the bottom. He must slowly acquire the confidence of the community in which he lives. "Nihil per saltum." He must go step by step. During this time of waiting and preparation, you are arranging the future of your lives.

When the proper time arrives, you can choose among the fair daughters of America a good helpmate. Do so judiciously, and it will be for your permanent happiness. It will also aid you in your success. There is a pretty story* told of Flaxman, the great artist. When he married, and in his honeymoon, Sir Joshua Reynolds, the President of the Royal Academy, said to him, "You are ruined for an artist." Sir Joshua was a bachelor, and probably a crusty one. When Flaxman told this to his wife, she answered, "A great artist you shall be, and visit Rome too, if that is really necessary to make you great." "But how?" asked Flaxman. "Work and economize," replied the brave wife; "I will never have it said that Ann Denham ruined John Flaxman for an artist." Flaxman did go to Rome, and became a great artist.

The public have more confidence in a married man. It feels that he has given bonds to society for his life's conduct. A perfect American woman is, I believe, the finest type of womanhood in the world. May each of you be blessed with a good American wife, a good helpmate. May her graceful figure and loving sympathy, brighten your happy home. May her sweet face, beaming with love and gentleness, welcome you cheerily to your fireside, and beam more brightly for your coming. May your home—that word so full of tender meaning, home—even if it be simple, be decorated by your loved one's taste. May it be made a brilliant, a happy and a sweet home, by the gracious amiability and the unselfish devotion of your wife, who is then your crown and greatest ornament.

Gentlemen, you have to-day passed through a momentous epoch of your lives. To-day is the commencement of a new career. In looking back happy are you, as you can face the retrospect with satisfaction, for now you can go on cheerfully to the unknown future. Man's life is a pilgrimage, a journey between the gates of life and death. All that we know positively, is the present, all the rest is faith, founded on revelation, which speaks of that something after death; that bourne from which no traveler returns. So we must act in the living present, and as nobly as we can. In this journey every day, as we march onward to the final halt, brings its responsibilities and its duties, its troubles and its pleasures. I hold we should endeavor to do a man's part, with what aid from above and around that is vouchsafed us; act as bravely and as well as we can. This, I think, is the wise theory and

*Smiles's Self Help.

practice. The unknown beyond, is unknown, so as not to tempt the suicidal hand. We are placed here, each one to fill a niche, larger or smaller.

Coming by a command independent of our own will, and without our wishes apparently being consulted. Each one should do the work, little or great, that is ordained to him, in aiding the world's progress and the happiness of his fellow men. You must be generous in victory, and magnanimous in defeat. Life is a battle. Your energies, sharpened by the struggle, are thus stimulated to still greater exertions; each of us doing his best, though that may be individually small; yet in the aggregate, by all combined endeavors, the world moves on; civilization advances; society makes a still greater development. Contrast the ancient times with ours; how now the earth is peopled, covered with the nations, and their great cities; how time and space almost seem as if they might be mastered by the means of steam and electricity. What great discoveries may next come, we may not yet know; but each of us filling well our sphere, is working towards and contributing of his strength to their development. The doctrine of the correlation of forces is being established; the evolution theory is being investigated; chemistry and physiology are being perfected; mechanical inventions are accumulating. We are sailing the air with balloons of greater capacity and power, and by astronomy are learning more and more in regard to the planets mapped out in the ether, around and beyond the sun.

In the old world are wars and rumors of wars; the excitement and unsettled condition of the lower classes; the seething and fuming of the socialists and anarchists, and vile assassinations by dynamiters and nihilists. Here, over our own beloved country, peace still spreads her pure pinions. Well may we be proud that we are Americans. From the early heroic days of our Continental forefathers; through the wonderful development of our country, even when governed by an aggressive slave power; in the second heroic period, when that power was overthrown by a mighty struggle; in which the bravery and endurance, and the ultimate magnanimity of North and South have developed their mutual respect. And now, without the clang of arms or hostile shouts, a new revolution has quietly taken place. This last peaceful revolution of the fourth of March. It must be a wonder to the whole civilized world—the old majority yielding quietly to the new majority. A great party, dominant for about twenty-four years, and glorious with a record of wondrous deeds, yields to its rival, and accepts peacefully the decision of the ballot-box. As patriots, we look earnestly for the good promised by this party revolution. A change of household goods and service, is sometimes for the better. May it prove to the advantage of our country! May confidence be assured, and the arts and works of peace flourish throughout the land, to all its borders! May we become more united and harmonious at home, more respected and feared abroad!

As man looks at himself and his works, he feels grand and important, and in ancient days, it is said, was so foolish as to try to build that tower of Babel, on which he wished to scale the skies. We must not now, in the conceit of our advancing knowledge, try to build an intellectual tower of Babel. We can no more now, than then, scale the skies or unveil the mysteries of the future. Eight years ago, during the Paris International Exhibition, I ascended several hundred feet in the air, in the captive balloon. It was fastened by a wire cable, in the Place de Tuileries. As the walls of the ruined palace seemed to sink below me, the hills and fertile plains surrounding Paris, expanded themselves before my eyes. When I looked down, the multitude in the Rue de Rivoli and in the garden of the Tuileries looked like little, tiny black flies fastened to the pavement, and without any perspective. How small a mite is man, compared to the earth on which he lives and dies. The earth, a planet twenty-four thousand miles in circumference, that makes day and night by turning on its axis; moving around the sun, wheel-like, at the rate of sixty-seven thousand miles an hour. Yet we do not fly off at a tangent, and can hardly comprehend the fact, and with still more difficulty, that we are distant in the earth's aphelion ninety-three millions of miles.* With the same difficulty, that large as the earth is, there are Neptune and Uranus, ringed Saturn and four-mooned Jupiter, larger than it; Jupiter, the largest, being twelve hundred times as large as the earth. Besides, what myriads of little worlds, spangle the deep azure

* Appleton's Encyclopedia.

of the sky at night, making the ethereal vault beautiful with their twinkling light!

How small a mite is man compared with the solar system! How wonderfully great must be that Almighty power, which sends whirling through space great worlds, each in its own orbit, one not interfering with the other, and fulfilling the purpose intended in its creation! How impressed should we all be with the fact, that we are weak creatures, and dependent upon a higher power; that we have our own little life to live, our own duty to perform; that we will live that life to the best of our ability, and do that duty to the utmost!

On this auspicious day of your "Commencement," with all the past behind you, and your future, with all its bright promise just in view, you can join with Tennyson in his joyous song to the past year—

> Ring out wild bells, to the wild sky,
> The flying cloud, the frosty light,
> The year is dying in the night;
> Ring out old shapes of foul disease,
> Ring out the narrowing lust of gold,
> Ring out the thousand wars of old,
> Ring in the thousand years of peace.

And now, gentlemen, on behalf of my colleagues and myself, I will say farewell; that lingering word, so full of tenderness. Yet when kindly said, in earnest, friendly tones, so full of pleasant retrospect, to bind those parting with memory's mystic chain. Though years may spread their mantle over us, and age may dim our senses; though lands may separate us, or oceans sweep between; yet in recalling the farewell said, lands and oceans disappear, and time lifts its sombre curtain; again the moment of parting returns—the scene itself—the many pleasing recollections of the past association, that ended in and made it worthy of the farewell.

May it fare well with you, gentlemen; may each of you return to a happy

> "Home, the resort
> Of love, of joy, and plenty, where
> Supporting and supported, polished friends
> And dear relations mingle into bliss."

May you, who now leave your *Alma Mater*, with her blessing on your students' life, to begin a new career, may all success attend you. May the honorable commencement of a most honorable career lead but to new honors, strewn thickly around your path in life. May all eyes beam kindly on you. May your noble thoughts and gentle deeds, crown you anew with the laurel. When the last dread summons comes, may men say to each other a light has gone out from our midst, and may your world feel the darkness. Reverently, I say, may God's blessing be upon you; may every happiness cheer you on your way, as you go forth on your beneficent mission to assuage the sufferings, close the wounds, and heal the infirmities of the weak, the afflicted, and the injured!

## *GRADUATES OF THE JEFFERSON MEDICAL COLLEGE.*

THE Degree of Doctor of Medicine was conferred on the following gentlemen, by E. B. Gardette, M.D., President of the Institution:

| | |
|---|---|
| Able, Samuel V. | Pennsylvania. |
| Alexander, William H. | Pennsylvania. |
| Ames, James S. | Massachusetts. |
| Bair, Philip W. O. | Illinois. |
| Baldinger, William H. | Texas. |
| Barr, John Chalmers. | Pennsylvania. |
| Beatty, Franklin T. | Massachusetts. |
| Beatty, Henry M. | New Jersey. |
| Black, William M. | Pennsylvania. |
| Bleiler, Charles Alfred. | Pennsylvania. |
| Boardman, Walter. | Pennsylvania. |
| Bogle, William H. | Kansas. |
| Bolton, Mayland. | North Carolina. |
| Bower, Charles H. | Pennsylvania. |
| Bower, Collier Levis. | Pennsylvania. |
| Bower, T. Charles. | Pennsylvania. |
| Brandau, John. | Tennessee. |
| Brinkey, Gasper C. | Pennsylvania. |
| Brown, George S. | Missouri. |
| Burd, Louis. | Pennsylvania. |
| Burns, Silas. | Pennsylvania. |
| Bush, Charles B. | Pennsylvania. |
| Cantrell, John Abbott. | Pennsylvania. |
| Capp, William M. | Pennsylvania. |
| Chapin, Samuel L. | Illinois. |
| Collins, William W. | New York. |
| Cooper, James Rudolph. | Pennsylvania. |
| Cooper, William R. | Pennsylvania. |
| Cornish, Percy G. | Alabama. |
| Cox, William C. | Washington Ty. |
| Coyle Robert. | Pennsylvania. |
| Cronin, Joseph J. | Massachusetts. |
| Cunningham, Hugh C. | Texas. |
| Da Costa, John Chalmers. | Pennsylvania. |
| Dahlstroem, Max. | Germany. |
| Davis, Theodore G. | New Jersey. |
| Day, Frank B. | Indiana. |
| Donaldson, Robert M. | Pennsylvania. |
| Dougherty, John A. | Pennsylvania. |
| Downes, Andrew J. | Massachusetts. |
| Dunning, James H. | Indiana. |
| Earley, Charles R. | Pennsylvania. |
| Earley, Francis G. | Pennsylvania. |
| Endlich, William F. | Pennsylvania. |
| Enterline, John H. | Pennsylvania. |
| Everett, Milton H. | Illinois. |
| Fair, John F. | Illinois. |
| Fairchild, Courtland de N. | Massachusetts. |
| Ferguson, Robert Vaughan. | Kentucky. |
| Ferris, Edgar S. | Indiana. |
| Fitch, Dorsey P. | West Virginia. |
| Flagg, Payson J. | Massachusetts. |
| Fruh, Carl D. S. | Pennsylvania. |
| Fuller, Harry C. | Pennsylvania. |

Garey, Jacob H.....Pennsylvania.
Getchell, Albert C.....Maine.
German, Howard W.....Pennsylvania.
Gilbert, Elon B.....Illinois
Gillespie, James S.....Pennsylvania.
Grander, Frederick L.....Pennsylvania.
Green, Dennis S.....Minnesota.
Green, Sylvanus H.....Pennsylvania.
Greenwald, Daniel F.....Pennsylvania.
Griffith, Martin Edmund.....Pennsylvania.

Hackney, Jacob S.....Pennsylvania.
Harding, Henry.....Pennsylvania.
Harter, John C.....Iowa.
Hartman, George F.....Pennsylvania.
Heffner, Oliver C.....Pennsylvania.
Henry, George W.....New Jersey.
Henry, John.....Pennsylvania.
Hetrich, George.....Pennsylvania.
Hill, Jacob F.....Pennsylvania.
Holt, Camillus I.....Texas.
Hudson, Leonard A.....Delaware,
Huffman, Lucius D.....Kentucky.
Humphries, S. Osceola.....Alabama.
Hurd, Frank H.....Ohio.
Hustead, Ashbel F.....West Virginia.
Huyett, Herman J.....Illinois.

Ingram, Theodore E.....Pennsylvania.
Ireland, Andrew B.....Pennsylvania.

Jordan, David B.....North Carolina.
Judson, Andrew Rice.....New Jersey.

Kauffman, Walter L.....Pennsylvania.
Kent, Alfred A.....North Carolina.
Kirkland, John A.....Illinois.
Kugler, George W., Jr.....New Jersey.

La Fon, Thomas F.....Missouri.
Lake, David H.....Pennsylvania.
Lamb, Albert Victor.....Pennsylvania.
Lang, Robert H.....Kentucky.
La Rue, Franklin.....Ohio.
Lecrone, Harris R.....Pennsylvania.
Leidy, Edwin D.....Pennsylvania.

McCahey, Peter.....Pennsylvania.
McCandliss, Henry M.....Pennsylvania.
McDonald, John M.....Ohio.
McDougall, Charles S.....Ohio.
McElwee, Henry W.....Virginia.
McGlenn, J. Averill.....Ohio.
McIlhaney, William H.....Pennsylvania.
McLaughlin, Robert J.....Illinois.
Marsh, George D.....Pennsylvania.
Martin, Ambrose H.....Canada.
Martin, George.....Pennsylvania.
Martin, Howard B.....New Jersey.
Maxwell, William E.....Alabama.
Mears, Daniel W.....Pennsylvania.
Miller, Henry B.....Ohio.
Miller, James, Calvin.....Pennsylvania.
Millikin, Thomas N.....Pennsylvania.
Mong, Elmer E.....Pennsylvania.
Morton, Thomas J.....Pennsylvania.
Moyer, John L. S.....Pennsylvania.
Murray, Thomas Walker.....Pennsylvania.
Mykrantz, Howard B.....Ohio.

Nance, George B.....North Carolina.

Oliver, John Edward.....Missouri.
Orr, Joseph D.....Pennsylvania.

Phillips, Lewis Oliver.....Pennsylvania.
Porter, John.....Pennsylvania.
Pyle, Jerome L.....Pennsylvania.

Reading, George Evans.....New Jersey.
Reed, Anderson F.....Missouri.
Reinhard, Wilson J.....Pennsylvania.
Rhoads, J. Neely.....Delaware.
Rich, Guy C.....New York.
Richardson, Davis H.....Maryland.
Richardson, James.....Delaware.
Ritter, William Elmer.....Pennsylvania.
Riveley, Martin Pierce.....Pennsylvania.
Rogers, Elmer H.....Pennsylvania.
Ross, James Thweatt.....Georgia.
Rugh, Carroll B.....Pennsylvania.

Sawin, Robert V.....Massachusetts.
Scholl, Alfred K.....Pennsylvania.
Sheets, Everett W.....Pennsylvania.
Sheppey, John V.....Delaware.
Shimavonian, Samuel.....Armenia.
Shollenberger, Charles F.....Pennsylvania.
Shull, William Milton.....Pennsylvania.
Simms, Benjamin B.....Alabama.
Simons, Arthur J.....Pennsylvania.
Smith, H. Winchel.....New Jersey.
Snoy, John Milton.....New Jersey.
Stern, Max J.....Pennsylvania.
Stewart, John C.....Scotland.
Stewart, Joseph J.....Pennsylvania.
Stoner, Harry.....Pennsylvania.
Stoner, James Buchanan.....Pennsylvania.
Stroud Frank G.....New Jersey.
Stroup, J. Calvin.....Pennsylvania.
Swygert, Sanders L.....South Carolina.

Taylor, Joseph M.....Pennsylvania.
Throckmorton, Charles M.....Iowa.
Torkington, Joseph.....England.
Trumbauer, Albert H.....Pennsylvania.
Tunison, Geoffrey Orlando.....New Jersey.

Vander Horck, Max P.....Minnesota.

Walker, Benjamin Franklin.....Pennsylvania.
Walker, Dale L.....Ohio.
Walker, Richard P.....Missouri.
Walton, Levi S.....Pennsylvania.
Warder, Charles B.....Pennsylvania.
Waterman, Francis C.....Pennsylvania.
Way, Julius.....New Jersey.
Weaver, John D.....Pennsylvania.
Wheeler, Walter Sewell.....Missouri.
Williams, Evan.....Pennsylvania.
Williams, J. Franklin.....Pennsylvania.
Wilson, James H.....Pennsylvania.
Wright, Robert Lee.....Tennessee.
Wright, Thomas Briggs, Jr.....Kentucky.

Yokum, Humboldt.....West Virginia.

Zauner, Robert H.....Pennsylvania.

## The following prizes were awarded :—

1. Faculty Prize of $200, for the highest attainments in all departments, to Peter McCahey, of Pennsylvania.

2. A prize of $100, by Lea Brothers & Co., for the best Thesis, to Andrew J. Downes, of Massachusetts; with honorable mention of the Thesis of Samuel V. Able, of Pennsylvania.

3. A prize of a Gold Medal, by R. J. Levis, M.D., for the best Report of his Surgical Clinics at the Pennsylvania Hospital, to Max J. Stern, of Pennsylvania; with honorable mention of the Report of Frank B. Day, of Indiana.

4. A prize of a Gold Medal, by Thomas G. Morton, M.D., for the best Report of his Surgical Clinics at the Pennsylvania Hospital, to Joseph D. Orr, of Pennsylvania; with honorable mention of the Reports of Leonard A. Hudson, of Delaware, and John Edward Oliver, of Missouri.

5. A Gold Medal, for the best Essay on a subject pertaining to the Practice of Medicine, to Max P. Vander Horck, of Minnesota; with honorable mention of the Thesis of T. Briggs Wright, of Kentucky, and G. Orlando Tunison, of New Jersey.

6. A Gold Medal, for the best Anatomical preparation, to Samuel Shimavonian, of Armenia.

7. A Gold Medal, for the best original research in the Chemical Laboratory, to Andrew B. Ireland, of Pennsylvania.

8. A Case of Instruments, for the best original research in the Materia Medica Laboratory, to Henry M. Beatty, of New Jersey, with honorable mention of the Thesis of John A. Dougherty, of Pennsylvania, and William H. Baldinger, of Texas.

9. A Case of Instruments, for the best Essay on a subject pertaining to Physiology, to Theodore G. Davis, of New Jersey; with honorable mention of the Essay of George S. Brown, of Missouri.

10. A Case of Instruments, for the best Essay on a subject pertaining to Surgery, to Albert C. Getchell, of Maine.

11. A Case of Instruments, for the best Essay on a subject pertaining to Obstetrics, etc., to Charles F. Shollenberger, of Pennsylvania.

12. A Case of Instruments, for the best Essay on a Pathological Subject, to Martin P. Rively, of Pennsylvania; with honorable mention of the Essay of Robert Coyle, of Pennsylvania.

The address before the Alumni Association was delivered by Dr. J. G. Holland, of Louisville, Ky., on the evening of April 1st, after which the orator was entertained at dinner by the officers and members of the Association.